

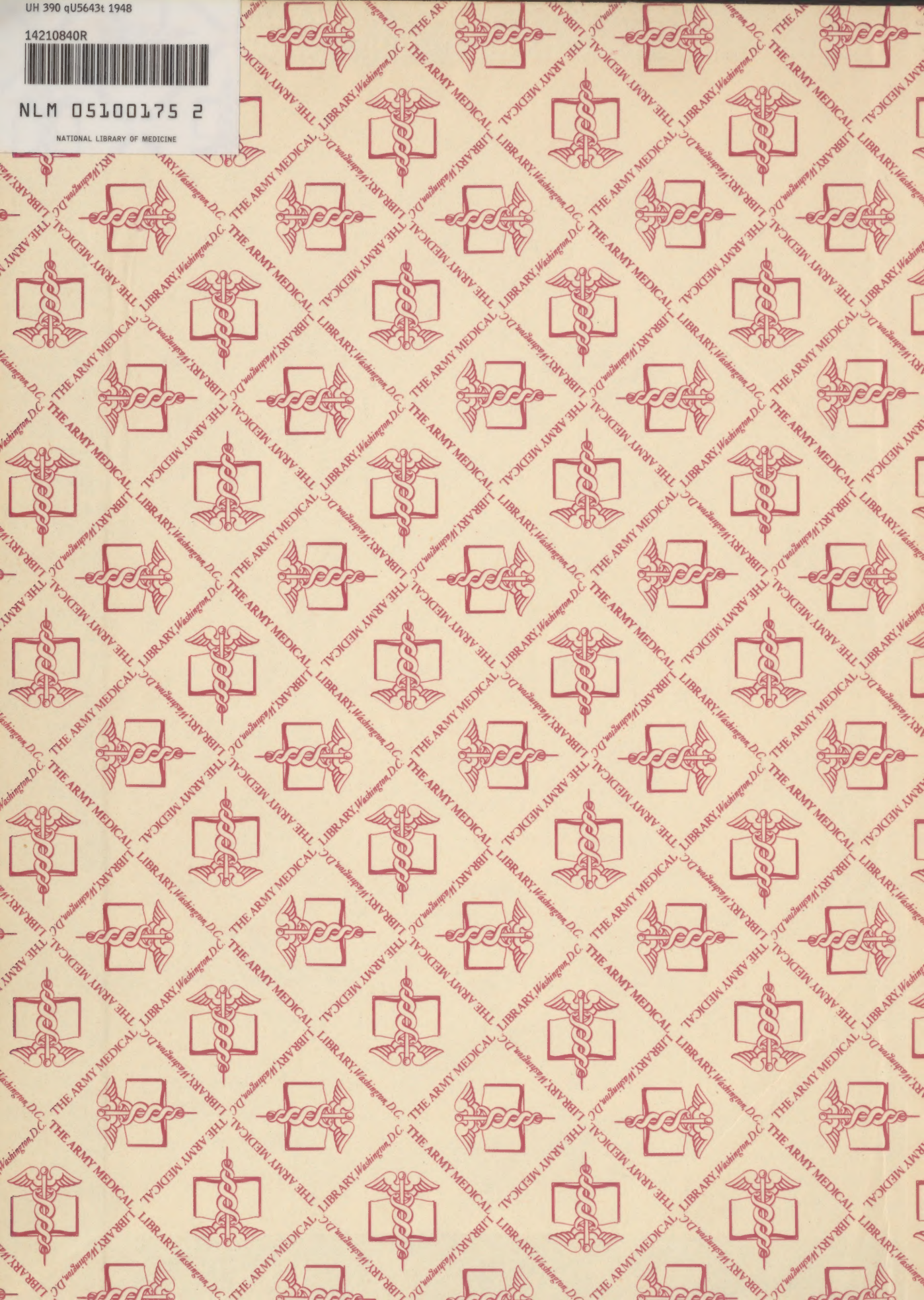




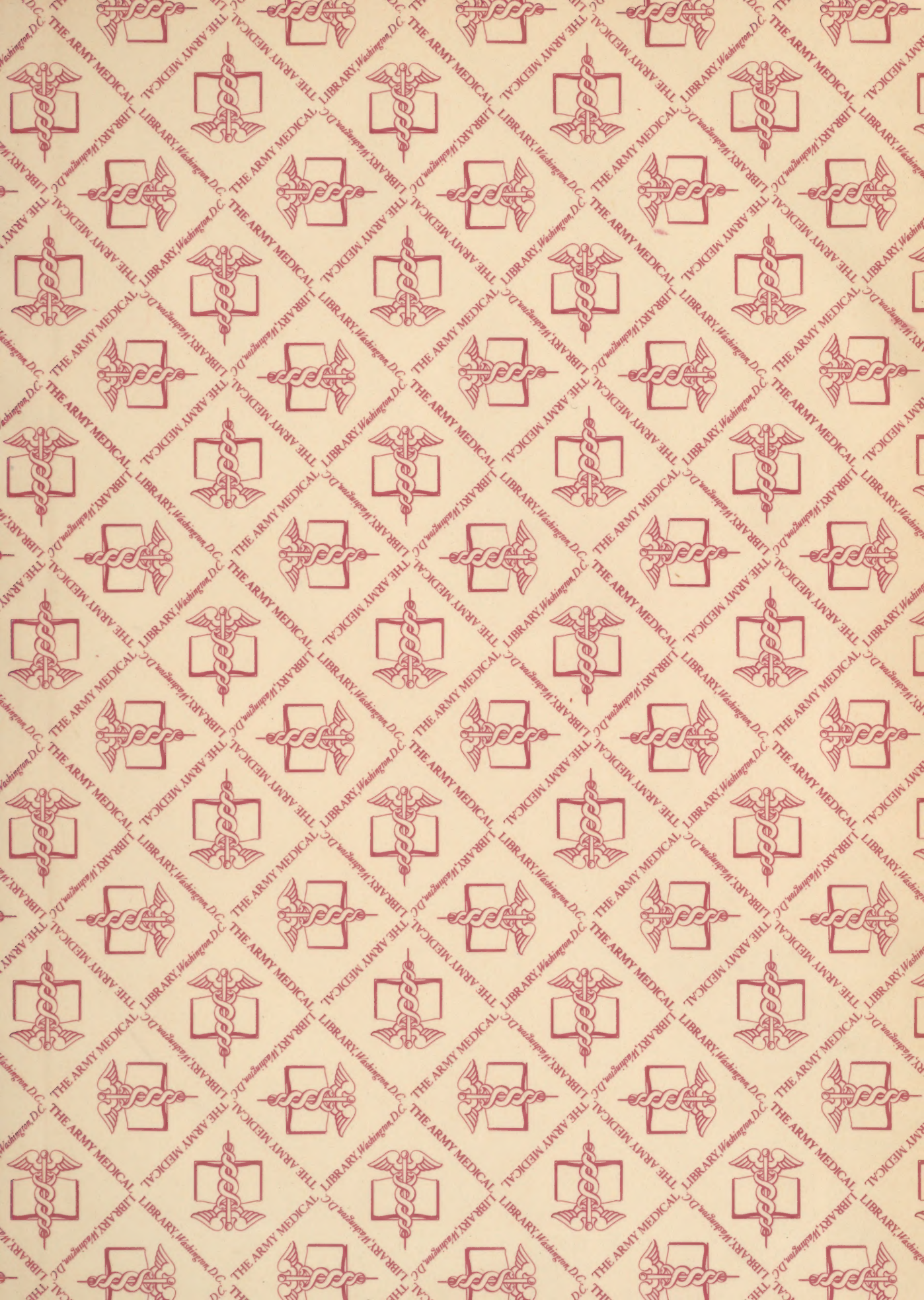


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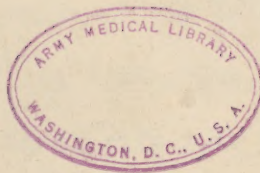


U.S. Army. Medical Service Corps. Medical Allied  
" Sciences Section

D R A F T

TRANSCRIPT OF THE  
MEDICAL SERVICE CORPS CONFERENCE  
MEDICAL ALLIED SCIENCES SECTION

MAY 27 - 28, 1948





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MAJOR KUHN:

We have available this afternoon a recording system which will enable us to get a complete record of the conference and later transcribed notes will be sent to each conferee, in some cases a report to a Society may be in order, and you will have that from this record.

We would like to ask that each person, especially tomorrow during discussion, when anyone wishes to discuss anything, identify himself by name and speak toward the microphone so that it will ease our identifying individuals on paper. Also, speak one at a time. I might say one word about the film. As you may know, there are a number of training films available for civilian use, ranging over a wide variety of scientific subjects. These may be had by writing to Dr. Edward Gunn at the Army Institute of Pathology. He will supply a list of those available, also sheets. Tomorrow morning we hope to have for you typed copies of summaries of the talks given today which will enable you to review for purpose of the discussion. Also, before we begin this afternoon, Colonel Whayne is going to clarify some questions which have been asked with regard to the purpose of the meeting and elaborate a bit on that aspect.

COLONEL WHAYNE:

I won't take but a moment, but in discussion with several at lunch and since, one or two points have come up that I thought might justify a word of clarification. First, in talking of a career planning for the Medical Corps and the projected plan for the Allied Scientists this morning, I think it was not made clear how flexible these Career Plans are to be. In other words,







they're flexible in both directions and there is necessarily no limitation as to age within reason and also there may be, where it is desirable, a certain amount of crossing over or between careers. I might also add that this thinking toward career planning is something new for us in the Army. I am afraid that in the minds of some of you it smacked more of regimentation than we would like to have had to believe because it is not an effort to regiment our people but something that is necessary in handling large groups of people and, after all, it is a career plan and is entirely flexible. Now one other point that I wanted to make was, in speaking of the scientists who would make up the Allied Scientists Section, it was certainly impossible to delineate the entire range of those scientists and I was afraid that some had the impression that we were limiting the Allied Scientists Section to those who happened to have been mentioned this morning. That is far from true. I think we can almost visualize that as we contemplate the research, study, laboratory and the many special works necessary in the development of many types of special weapons and so on as the range of scientists allied to medicine becomes greater and greater. We have no idea of limiting the number of scientific specialists that may be brought into the Allied Scientists Section as they become necessary. I want to be sure it is understood that we are not limited to those discussed this morning. One other point brought up by Dr. Griffith, a question in the mind of several I believe, was that there might be some misunderstanding as to the objective of this meeting. One point we want to make particularly clear is that there was not in the Army, prior to World War II, any organization for the Allied Scientists. Prior to World War II we had medical officers and laboratory physicians and they were aided and abetted either by civilian employees or in most cases by trained enlisted technicians. Since World War II, we





The establishment of the Medical Service Corps, where we have no organization within the framework of the Army for the Allied Scientists so that in setting up the Medical Service Corps and the Allied Scientific Section within it we are starting out on a new departure. It is for that reason that we felt we should have the advice, help and council of this group of experts in planning the scope and utilization of these very important scientists in the future. Thank you.

WILLIAM B. BROWN

We are going to depart from the order as given, Speaker No. 16 on the second page, Colonel A. C. Cox, Medical Corps, Chief, Army Industrial Hygiene Laboratory is going to talk first on the Army Industrial Medicine and Hygiene Program.

COLONEL COX:

Chairman, and gentlemen, the Army Industrial Medical Program is a distinct outgrowth of World War II. During the period of emergency, 1939 to 1941, there was the beginning of a small program in the Army owned and operated arsenals and depots. With the advance of the war this required tremendous and practically instantaneous enlargement. Members of the Specialty of Industrial Medicine, Industrial engineering opening to our assistance, obtained their commissions, and offered their services. All of these officers, except certain Medical Corps Officers were commissioned in the Sanitary Corps. Approximately eighty percent of the total commissioned force were members of the Sanitary Corps. They were chemists, industrial hygienists, chemical engineers, industrial engineers, and sanitary engineers trained in industry. We believe that they are correctly





assigned and the results gained from the Army's Industrial Medical Program. During these years merits great belief that the Allied Sciences, as we now know these matters of the Sanitary Corps, did much to help at that time. The organization was a part of preventive medicine, the occupation of health divisions as the leading division, and there were two sub-divisions, the Army Industrial Hygiene Laboratory and the Armored Force Laboratory. Both did major work and solved major problems. Following the close of hostilities, the occupational Health Division was closed and the Surgeon General added the duties of the occupational Health Division to those duties of the Army Industrial Hygiene Laboratory. The Armored Force Laboratory was separated and is now the Medical Field Laboratory. The Army Industrial Hygiene Laboratory, the Chief of that organization now acting as consultant to the Surgeon General, operates and administers the entire Army Industrial Medical Section of the Preventive Medicine Division. This industrial program is divided functionally into two parts, one of which says those Army owned and operated depots, plants, ports of embarkation and arsenals and the others serve the civilian employees self-service program. An emergency occupational medical service for on the job injuries and illnesses proximal to employment is provided and also emergency treatment for non-occupational illnesses and injuries requiring attention during working hours is provided. For the second type of illnesses and injuries, there is referral to private physicians. For those injured on the job or developing diseases proximal to their employment, the Bureau of Employees Compensation provides the medical care and has a staff of physicians to whom the injured or ill employee can be sent and the charges are paid by the U. S. Government. This program includes a preventive medical program which is integrated both with the industrial medical program at the Army owned and operated installations and the Federal employee's health service program and installations like the Pentagon.





where the jobs are administrative, clerical, financial and so forth. We were trying to separate industry part as from the clerical and administrative jobs. Industry needs a broader program. The Army Industrial Hygiene Laboratory is divided functionally into sections, the Administrative Section, the Medical Section, an Industrial Hygiene Survey Section, an Engineering Section under which there is a branch for Plans and Development, the Chemical Section, a Toxicological Section which is at present being administered by the Medical Section, the Radiological Safety Section which is under the Industrial Hygiene Section, or the Survey Section, a straight Chemical Section which also does a tremendous amount of pharmacological and toxicological investigations. Our staff is small, however, on the staff we do have administrative medical corps officers, practicing medical corps officers who practice industrial medicine, we have our industrial chemists, our industrial hygienists, our industrial engineers, these engineers are Medical Service Corps officers, and a radiological safety officer who is a Medical Service Corps officer. We plan to have, if possible and the funds are available, a Medical Service Corps officer trained in industrial engineering on the staff of the Surgeon of each army area in the six areas in the United States. That will decentralize the tremendous problem which we have now of covering the entire United States from one central locality. A great deal of time is spent in travel in order to get to the various areas. We have at present a tremendous increase in the toxicological investigations. These are necessitated by the rapid advances in chemistry, the plastic industry and radio chemistry. Large numbers of new substances are being piloted for use in the development of equipment and materials for the Armed Forces. These substances which come in intimate contact with the skin of the individual, or are used constantly by the individual, must be examined as to the toxicity or the toxic implications as these substances determine. The Army Industrial Hygiene Laboratory





tory also acts as the laboratory for the Air Force. The Air Force desires and requires that very biological considerations are made relative to new fuels, relative to new substances for great examination and so forth so that there is a tremendous amount of investigative work going on in our laboratory at all times. We have a small program relative to visual skills which we hope in the future to have an Optometrist assigned, the Optometrist I believe will be commissioned in the Medical Service Corps. We find that fatigue is of tremendous influence in industry and that if the jobs are not engineered correctly the man goes home from his work doubly tired, unable to enjoy the two-thirds of the day which he has purchased for his own recreation, his home life and his home activities by his eight hours of work. We find that we have a better employee if we engineer his job correctly and prevent the undue and unnecessary fatigue. That is a job for the industrial job engineer, so that he may permit the worker to work rapidly and skillfully with the minimum expenditure of effort. We can produce more rapidly and we can produce with less fatigue when the job is properly engineered. In order that the job may be properly engineered, we need the assistance of course for that engineer of the medical officers in order that the medical officers may carefully explain and watch all the physiological processes. We do not expect our engineers to be expert physiologists, but the engineer is the man who tells us where there is waste motion, what is the best way to move a sheet of paper. I believe a short while ago in life we saw an illustration of how in a factory you could best move a large sheet of plastic, examine that sheet of plastic and determine any defects with the least number of movements and the best method of seeing what was on each side of the plastic. The proper location of drinking fountains, for example, is important. Optimum lighting and ventilation are tremendously important. We need our engineer to





have some knowledge of sanitation also, because the sanitation and housekeeping of a plant are tremendously important. The sanitation of the lunch rooms where the men and women retire at least once a day to eat their meals or to be fed is important because we need to avoid intestinal diseases and we also need to give them a cheerful place to eat. You may think that the Army Industrial Hygiene Laboratory serves only the army but you would be surprised perhaps to know that there is not a day goes by without a letter requesting information relative to industry, the toxic implications of various substances used in industry, the best pressed methods for avoiding hazards, information relative to maximum allowable quantities, whether or not we do not consider that we are too high or too low, all of these things come from civilian industry to us. Of course, a number go to the U. S. Public Health Service also but the Army Industrial Hygiene Laboratory, since 1942, has gained such an enviable reputation that industry is slowly turning to us because our Army owned and operated industries are very similar to much of the work done in industry at the present time. Each one of these requests is very carefully investigated, all of our files are searched, if we have not the material in the file we search the literature, and we even do research work if it would be at the same time of advantage to the National Defense so that industry obtains information from us constantly. We have a limited training program and a rather limited career program because we are small. We have a staff of only twenty individuals, nine of which are military and eleven civilians. At the present time one officer has just completed approximately a year's training, on 1 July a second officer will come in. We have given a Medical Science Corps officer training in radiological safety. He is now our Radiological Safety Officer, making the necessary surveys of such installations as 250,000 volt X-ray machines, 2,000,000 volt X-ray machines,





20,000,000 volt betatron machines, and is also capable of evaluating the hazards in the use of isotopes. This officer has become a very important officer on our staff. In our own building in which we are working, isotopes are now being worked with. We must, as Industrial Medical Officers, whether we be Medical Corps officers or Medical Service Corps officers, make certain that industry and that our men who are in industry, are surrounded by the optimum healthful conditions and that all hazards are properly evaluated and those which may be eliminated are immediately eliminated. We hope to continue our program of training. We have a set-up for career training. That set-up for career training will involve not only Medical Corps officers but also involve the Medical Service Corps officers so that they may come into our branch of Industrial Medicine and also be instructed in preventive medicine on a wider scale so that they may go into various assignments in preventive medicine back into industrial medicine into preventive medicine, back into industrial medicine, remembering at all times that we consider that industrial medicine or occupational health is a subspecialty of preventive medicine that preventive medicine is the father. We are using the tools of preventive medicine, as I spoke to Colonel Whayne this morning the epidemiology of an accident is exactly the same as the epidemiology of a case of measles. We need more epidemiology in industry in order that we may have the hopes, the agent and the environmental relationship really understood by superiors in industry and then they will understand why accidents occur, the points of outbreak of accidents, and seasonal outbreaks of accidents. We are going to have a seasonal outbreak of accidents, we all know, at the end of this week and the first two days of next week. Every time we have a three-day holiday we have a seasonal. It is practically cyclical for the years that when we have a three-day holiday, this year the Fourth of July, Memorial Day and then again Labor





Day in our country we have three three-day holidays. That occurs cyclically but occasionally we have other periods of the same type which come seasonally and we get additional three-day holidays in. We know that these accidents are going to occur. Now the most important thing I think we have to look ahead to in our program, since we are small at the present time, and we will continue to remain small during peace time, is the need of a highly trained reserve of experienced experts and especially Allied Scientists who will be able, because of their reserve commissions, to enter into active duty when the emergency arises. The importance of the industrially trained engineers, chemists, hygienists, parasitologists, pharmacologists, epidemiologists and one or two cytometrists cannot be too highly impressed upon you. Without that we will not succeed in an emergency. They came to us voluntarily in the last World War, however, they had to be trained, our program was delayed because of that, trained by periods of training and active duty, looking forward to being taught more and getting their reserve training on the job in our installation. We can depend upon them and they can be of wonderful assistance to us. In industry we have had a real demonstration of what industrial medicine can do. During the past six years governmental industry has seen what industrial medicine and industrial hygiene can do. These Reserve Medical Service Corps officers qualified in the specialties which we have outlined and with industrial experience would permit and effective expansion of the Army occupational Health Program at any time as such expansion was needed.

MAJOR RUMER:

Are there any questions? The next speaker is Major G. F. Rumer who will speak for Colonel Don Longfeller, Chairman of the Medical Research Development Board. Major Rumer will speak on the Research and Development Board, SCC.





MAJOR KULLER:

Gentlemen, I will not take up much of your time, I do want to emphasize certain points within our Research and Development program. As you all know, about 50% of the personnel used in Research is of the Allied Science group. We have attempted, in our army installations, which are the Medical Department Field Research Laboratory, Fort Knox; Medical Nutrition Laboratory, Chicago; The Ocular Research Unit, Walter Reed; The Surgical Brace Research Unit at Walter Reed; The Army Research and Graduate School, The Army Medical Center at Walter Reed; the Surgical Research Unit at Ft. Sam Houston and Tuberculosis Metabolic and Nutrition Unit at Fitzsimmons. We have at the present time these facilities in good shape; however, the addition of Allied Science personnel is essential. The groups that are most concerned are physiologists, biologists, pathologists, and bacteriologists. Particularly in the field of research bacteriology there are many openings available. As you know, the army in its use of streptomycin has attempted to produce more and better clinical results in the treatment of tuberculosis, however, they are based on the laboratory findings of sensitivity of the organism to streptomycin. In the field of Research Bacteriology at Fitzsimmons, openings in research bacteriology are prominent and men, if made available through the Allied Scientists group, could be assigned there and could produce much valuable research work both for themselves and for us. In the field of physiology the Ft. Knox Medical Research Laboratory is the prime mover along with the work done at Medical Nutrition Laboratory which Dr. Johnson will tell you about later. Our basic research in the field of physiology is carried out at Ft. Knox which at present is staffed mostly by civilian personnel. That can be expanded and it is intended to be expanded providing, of course, that we get funds. One of





The major difficulties with research work, as you all know, is adequate funds. We are dependent upon Congress for these and--well, we don't get exactly what we want. In this case we do not get nearly the amount that we think we should. Out of our budget of about three million dollars a year about a million and a half is spent on basic research. So the opportunities are certainly wide in that field. We proved, during the last war, that under stress research can proceed with great strides. Now that we are back to a more leisurely pursuit of knowledge, we hope that we will be able to increase our research facilities. But to increase them we need personnel and we hope that through the program as outlined by Colonel Coriup that we will be able to provide personnel for the expansion of these facilities. One of our major sources of information in the field of Traumatic Surgery for instance is at Brooke General Hospital at the Surgical Research Unit. A study of Bacalaracin is being conducted there and there again the field of Research Bacteriology is prominent. We have had the opportunity of bringing over under the Payer-Clip projects some German scientists in that specific field of physiology who are assigned there at Ft. Knox, and we hope that they will produce a great deal of knowledge in that field. We hope we will be able to make evident to Congress through one means or another the need for continued research and expansion of research. The field of medical research is so broad that the openings are limitless, and the fund of information to be gained is also limitless. In the work that is being done at present we feel that increase in the Allied Science personnel is absolutely necessary. To continue along this vein would be fruitless because I think probably the best way to get answers to the questions that you gentlemen might have, would be to wait until the discussion period, where if you have any specific questions they may be brought up, for I could go on and on in this





field of Medical Research and not cover any one part of it. I prefer to leave it to you gentlemen to think over and bring up any questions that you might have at the discussion period later on. Thank you.

MAJOR KUHN:

The next speaker will be the Commandant of the Army Medical Department Research and Graduate School, Colonel Rufus Holt.

COLONEL HOLT:

Mr. Chairman, Gentlemen (See Speech) Thank you.

MAJOR KUHN:

Are there any questions for Colonel Holt?

Colonel Otis Benson, Chief, Medical Research Division, Office of the Air Surgeon will speak for the Research and Development Board of the Office of the Air Surgeon.

COLONEL BENSON:

Dr. Kuhn, Miss Hagen and Gentlemen. I wish to say first that we don't have a Research and Development Board in the office of the Air Surgeon I am sorry to say. I do represent the Research Division which is under the auspices of the Air Surgeon. I would like to take this opportunity to greet the scientists who have so generously responded to the call of The Surgeon General for counsel and advice in the important consideration of staffing the Medical Allied Sciences Section of the Medical Service Corps. It seems that my role in this conference is to present briefly the Air Force's researches in the





field of medicine and allied sciences and to outline our scientific personnel opportunities and requirements. I emphasized briefly I think. All the Research and Development work in the Medical area, in the Air Force, is focused on the human factor in military aviation. The Air Force Psychology Program is under the broad supervision of the Air Surgeon as well as the Aeromedical Research and Development Program. Investigations initiated and carried out in Air Force Aeromedical laboratories, or by university contact, stem from problems related to flying or to personnel associated closely with flying activities. Stated somewhat as a slogan, one might say the mission of the Air Force aviation medicine is to enhance the tactical efficiency, safety, morale and the general welfare of fliers and associated personnel. Team work in research and development with engineers and allied scientists has been sought and accomplished in the solution of many problems in this field. I have been very much impressed with the English efforts in that respect. Teamwork in research, in which the various \_\_\_\_\_ are represented in research teams. The Germans I think have done considerably better than we have, I hope that we have learned something of that type of teamwork which is most useful certainly in our work. When the problems become those of clinical medicine and researches in that field, support is expected of The Surgeon General of the Army and other agencies active in such studies. Close liaison and cooperative efforts have been attained with Naval Aviation by means of the Aeronautical Board and by personal contacts. The interesting thing, the Air Surgeon has been delegated the responsibility of monitoring and administering memberships and the other activities of the Committee on Human Resources and the Committee of the Medical Sciences of the Research and Development Board insofar as Air Force interests and participation is concerned.





We do have a small tradition of research. It is limited in aviation medicine but it extends back to the first World War. I have been impressed more and more upon various meetings that so much of the military research in the Armed Forces have by and large sprung up during the war, so maybe we can take a small pride that our history does go back to the first World War then the laboratory was established in Mineola, Long Island. This laboratory and the School of Aviation Medicine have a continuous record extending to date although we certainly must admit that a very low ebb of activity occurred in the 1920's and most of the 30's. Our laboratory of Aviation Medicine at Wright Field was founded fourteen years ago and has had a steady growth with the scope and tempo of our current activities exceeding those of the past war. We are doing more now than we did at the height of the war. Our budgets are larger, in addition. About a year ago we closed the Aero Medical Laboratory located in the Kaiser Wilhelm Institute in Heidelberg, Germany and re-activated the organization as the Arctic Aeromedical Laboratory. This unit moved to Alaska in September of last year and has had an opportunity to conduct studies through one Arctic winter. It was a mild winter, of course.

I shall not harangue you with descriptions and enumerations of our researches but I do wish to emphasize that we employ a rather large number of psychologists and physiologists and a lesser number of bio-chemists, bio-physicists, physicians, anthropologists, biologists, and a small sprinkling of scientists from other disciplines. We stress team work which I have mentioned in research and commonly work in hand with engineers. Much of our data has been incorporated into the Handbook for Aircraft Manufacturers so that the practical applications of our discoveries are usefully, commonly, in obvious material improvements.

I should like to emphasize General Grow's remarks of this morning with the statement that we have a number of excellently equipped laboratories; we have





personal salary in our services who, under proper arrangements, can become subjects of study. (Dr. Johnson used some of our people.) We have numerous aircraft and other extensive mechanisms; we have rather large authority for travel; and we shall supervise the entire Air Force enterprise, regardless of its geographical location; but that is our true laboratory, our area of field study, and our proving ground. With problems seemingly unending and with these great resources at the disposal of the research worker, it would seem that this should truly constitute a challenge to deeply motivated research-minded professional people. Now I suppose that should be qualified with the statement that we, I feel quite definitely, can't permit open invitations and say that anybody who comes with us can research on any subject or area of his choice, but there are areas of great latitude, and I still say our opportunities are unending. We could use an occasional enzymatic chemist or somebody concerned with micro-respiration. We can't use many, obviously, but if a man is a basic physiologist let's say, then I think the opportunities are unique and they are certainly of great scope. Now the staffing of our laboratories--we have recently obtained authority for two P-9's, the P-9's are those that exceed the \$10,000 a year the Congressmen used to get so that these positions can authorize a salary from a minimum of \$10,000 to a maximum of \$15,000 per annum. We hope one day to fill these positions. We hope that we will attract some of the people of national eminence and, in turn, that these scientists will attract people to us. We would like to think that they were the magnet and an inducing agency. We do use German scientists, we have a relatively few number of men who are now commissioned in the Medical Service Corps, Allied Science Section. Some of these men did work with us during the war, and we were able to induce them to accept permanent commissions. A large number of civilians, and we do use something which is relatively unique, we use a sizable number or reasonable percent of





Air Force officers and do have advanced degrees. The Air Force has been very generous, I think, in surveying their personnel, and offering us the services of the men who hold advanced degrees in the fine arts, biological sciences. We do have a few engineers working for us. It used to be quite low to let anybody but a doctor work for a doctor. I think General Armstrong will probably tell you that he has a pilot engineer assigned to him. I'd like to think, and I am sure it is right, that our alumni record is good. These people who worked for and with us during the war or who left after the war have gone back to universities. I can think of any number of young men who are now full professors. I wonder if in that same period of time, if we had had fairly normal times, if they had stayed in the universities, would they have floated to the surface so rapidly or swum to the surface so rapidly and would they have had as good identification. The point I wish to make is that I think anybody who is capable, who is aggressive, does not get, should not and does not get, become suppressed when working in military laboratories and I am reasonably safe in saying, I am sure, that those men with those capabilities did not, if they gained recognition beyond the recognition that they would have gained had they stayed in universities during that time. I am ready for a challenge for that but I think I can support it. As a result of some of the war work, we have a number of publications, I think worked into psychology volumes, which are outstanding. We hope very soon to have a publication out on the German work during the war. This unpublished work was done in German laboratories from 1939 to 1945. I'm going to give Dr. Blake here a book (we get in strange bl-says) it isn't a book, I hope it is sort of a landmark, a handbook of radio activity with a trace of pathology that we got to work with radio active gases rather early. We associated with Dr. John Warren, Radio-Active Argonecton and we hope that one day it will become a well established after it





has shown over the year or so. Educational opportunities in the Air Force again have been generous and have offered on using Air Force funds to give post-graduate instruction to a relatively small group, 10 or 12, men in the basic sciences. We have one man who will have a second year in advanced statistics at North Carolina which I believe is an outstanding school in that field, or we have men who are receiving advanced training in radio-biology, and I think maybe we're slipping a little from our medical role when we have to Air Force educate these people, but maybe what I'm saying is that within the Armed Forces in one way or another, there are educational opportunities.

MAJOR KUHN:

Are there any questions for Colonel Benson?

Dr. Robert E. Johnson is Director of the Nutritional Laboratory from Chicago, and will discuss the activities of that organization.

Dr. JOHNSON:

Mr. Chairman, Members of the Meeting-- (See Speech). Thank you.

MAJOR KUHN:

I want to suggest that we have one more speaker and then a short recess. The Commandant of the School of Aviation Medicine, Brigadier General Harry G. Armstrong, who will talk to us on the School of Aviation Medicine.

GENERAL ARMSTRONG:

Chairman, Gentlemen--We feel that we have the toughest medical problem in the military services, based on the fact that the mortality rate of pilots is five times that of comparable ground officers for all causes. Of every 100 pilots who



begin flying in the air Force, at age 22, 25% of them are dead, or disabled and out of the service by age 35. I think that I perhaps have the honor of being one of the oldest in the period of years of service in connection with research in the military service. I may be mistaken about that, but it seems like a long time. And during that period of time I have reached certain conclusions that I think perhaps you might be interested in. To begin with, I think that you have probably been told this before, by someone else, but I think that the thing to do is to freely admit that previously during the war we fumbled the research problem very badly. I think it's also fair to say that we are still fumbling very badly. But I also think it fair to say that there is a light in the distance and that research in the military services within a very reasonably short period of time, will be on a basis which will be equal to that of any other agency in the country, not excluding the universities.

The work that I have been engaged in, or associated with, has made it necessary that I try to evaluate what we are trying to do and how we should try to do it. I think it common fault of medical officers, in general, and doctors in particular, to depreciate men who are trained in the basic medical sciences. I have taken the trouble to look over the literature of the past many years and I find that most, at least the majority of our outstanding medical discoveries, was made not by MD's but by people trained in the basic medical sciences. The same is true, in general, for the field of preventive medicine and for many years I have been very much sold on the value to medicine of all types of the man who is trained in the basic sciences and I have utilized these people to the maximum extent in the laboratories that I have been associated with. In our School of Aviation Medicine, our job is to try to reduce this very high mortality and morbidity rate among the flying group. It might be asked what can a medical officer or what can medical people do about an airplane





accident. Flying is a dangerous business, and if you're going to fly you're going to get hurt. Well, there is no answer to that and that is true. Two-thirds of those accidents are due to failure in the human equation. To say that that is a problem which is not in accordance to medical people, to say that we can do nothing about it, is equivalent to saying that we can do nothing about cancer, or that 50 years ago that we could do nothing about tuberculosis and certainly I think that no medical man would care to or would dare say that we cannot and should not attack that problem. The difficulty that we run into is that we are running a race with the aeronautical engineer. As we make improvements in our techniques of selection of people, physical standards are improved, develop flying equipment, the aeronautical engineer comes along with faster, higher performance aircraft and he ups the danger rate or the hazard rate and we are barely holding our own. In 1913, the British made a survey of their casualties in the War in the aircraft and found at that time 2% of their deaths were due to the enemy, 3% were due to defects in the airplane and 90% were due to defects in the individual themselves. And after a period of thirty years, in spite of a great amount of very good work, we still have 66% of our accidents due to failure in the human element. For example, during the war the first 32 months of this war, while we were losing 7,700 aircraft in combat, we lost 11,000 in the United States due to ordinary flying and flying training in the USAF. And in essence the Air Force is at war all the time whether we are at war or not. This is a very serious problem and we are doing the best we can to attack this problem.

To give you some idea of the type of people that we have and utilize in fighting this problem of , titles of compilation I made a short time ago as to the type of people (We were asked to submit our requirements for people for the next five years.) and these are the types we asked





for: anthropology, biology, rather these are the fields, bacteriology, biostatistics, bio-chemistry, nuclear chemistry, pharmacology, physiology, physics, bio-physics, nuclear physics, physiological optics, physical education, nutrition and five different grades of psychologists, psychometric, industrial, clinical, personality and general experimental.

The types of problems we are working on now, or just to give you a few out of 87 projects we are busy on, one here is the effect of various drugs on flying ability. For example, we are not interested in the drug primarily as to its effects; but for example, the new malarial or anti-malarial drugs, we are interested in knowing what effect the routine use of these have on a man's auditory. We study all these drugs in that connection. We have several studies on the effect of the lack of oxygen on the renal function, on liver function and such things during \_\_\_\_\_noxia and so on.. We are studying altitude \_\_\_\_\_-ration and we are just referring the amount of graph on the pathology of \_\_\_\_\_. We are studying the respiratory \_\_\_\_\_ at the present time and using tracer element to help out in that study. We are studying accident causation, pilot front-bite, \_\_\_\_\_ of decompression, visual perception at supersonic speed, effect of glare during \_\_\_\_\_-noxia. We have several studies on color vision, color saturation \_\_\_\_\_ action in relation to depth perception used in landing airplanes at high speed. Many tests on air crew classification trying to select better suited people for high speed flying and such things as physics and physiology of space travel, getting ready for the interplanetary wars we shall be engaged in soon. But we have, and need help from basic medical science people because practically all of our problems, or a great many of them at least, can only be solved by those individuals. Now we have both civilian and military scientists with us down there, and the situation in some extent is a little bit amusing because the civilians



complain, or their chief complaint is that they don't have all the privileges of the military. So my answer to that is, of course, that they are perfectly acceptable for the military service and if they want those privileges that they should put in for a commission, but you can't have your cake and eat it too. But if you want the privileges of the civilians, then that's fine. That's what you should have, and that's what you've got. If you want the privileges of an officer, why then you should get a commission. Actually, there is practically no difference. I think one of the things they mention is that they weren't allowed to cash checks at . . . They do have the club privileges down there, they have all the privileges of an officer. The bachelors, most of them live on the post, and I think that for all practical purposes they do have all the effects of such privileges and to have to go down town to cash a check, I don't think is too much of a legitimate complaint. Then again they always throw back at me how much better it is at the university, and I'll grant that in several respects, it probably is, but I ask them this question. In how many universities can you fly in an airplane at no expense at \$7.00 a day to scientific meetings? And they haven't been able to answer that one. So the services are getting a little bit better as far as the scientist is concerned, and actually, we are having no difficulty down there whatsoever. We have a full complement of people that we can accommodate. As a matter of fact, we are now turning down applications, and it's been rather interesting to me to watch the rise and fall of the post-war hysteria. I am just as old as I look. I was in the first World War, and I remember very distinctly the hysteria at that time, and how bad the services were and so on, so when the great exodus came down there after the war, I didn't get a bit excited about it because I thought I knew what would happen and it has. These people all left, very bitter about the service, didn't like the place or anything about it, or anybody that was there--but came the . . . of being





quiet and in about a year they began to drift back. Now several of them are back again, and I am getting some rather pitiful letters from a lot of people now who say that because of the emergency, or the international situation, don't I think they should come back. Well, I have to tell them I don't have any work, and they're a little bit

because they find that they think maybe they should be doing their bit by getting back into the service. So we've had help difficulties down there in that respect. We do hope to get some better accommodations, I shouldn't say better because I think we have about as good a laboratory as you'll find in the country, but it isn't big enough and, if we do get bigger accommodations, we will need more people. But I would like to leave this thought with you--that things in the service are not too bad, and it seems to me that there are two things that scientists should keep in mind in this country, perhaps young scientists, and that is that the military services are going into research on a large scale. Those individuals that got into the program early are going to be the leaders of the future

The second thing is that there are articles beginning to appear in Science Journals which indicate that within a few years we are going to have a surplus of scientists, and if we have a recession, there are not going to be so many jobs as there are now. And if I were a young scientist, I believe I would think very seriously about my future in connection with the Armed Services. I think it has a lot to offer as many of the fields of military medicine are practically untouched. It's a new field as far as research is concerned. We've stumbled along for centuries, actually; and we haven't really done any real good research in many areas. It is easy to make your name in a new field where everything you do is new, but you get into an old field where, for example, assumption, you've been studying that for a long time, and you've got to look for a long time and be pretty clever to discover something new about





but you probably wouldn't have to work too long to discover something new about  
and its easy to make a name for yourself in these various  
fields. I certainly think that young men should very seriously consider the ad-  
vantages that military services offer them either in uniform or out because I  
think that conditions which are not too satisfactory at the present time in cer-  
tain areas, not in important ones, but with small difficulties, will be ironed  
out and it will be a very pleasant place to work in years to come.

There is just one final thing I would like to say and I think you all know  
this as well as I do, that in that national defense today it is not the problem  
of the men in uniform. It is the problem of everybody, and I think that each of  
you, and the fact that you're here, are people who realize that or you wouldn't  
be here. You're all busy, you're very prominent people, you have your own jobs  
to do, and if you didn't feel it such a responsibility, I'm sure whatever enticed  
you here is not being your trouble and work that you are not getting done  
in your job. But it seems to me that you could do a great service by  
passing on to the younger scientists their responsibility in connection with  
national defense and discuss with them, or point out to them, that through  
joining the reserves for example and making some effort to communicate or get  
in contact with the military laboratories and find out what the military problems  
are, would indeed be a great contribution for this group to make because if we  
get into a war research is certainly going to expand tremendously and all these  
people I'm sure will want to

Thank you.

MAJOR KUHN:

Any questions for General Armstrong? Major Benade, did you want to take  
part of the recess session for your business?

(RECESS)



MAJOR KUHN:

I think everyone is back again so we'll start. We've used these extended recess sessions on purpose. We'd like to find out what questions are accumulating in people's minds and anything that happens to be funny, so that we can adapt a later part of our program to answer questions as they arise. The Chief of the Neuropsychiatry Consultants Division, Surgeon General's Office, is Colonel John L. Caldwell, Medical Corps, who will speak on Clinical Psychology and Psychiatric Social Work.

COLONEL CALDWELL:

Mr. Chairman, ladies and Gentlemen --- (See Speech)

MAJOR KUHN:

Colonel E. J. Kendricks, Chief of the Aero Medical Laboratory is unable to be with us this afternoon. Colonel Otis Benson, Jr. who was one time Chief of the Aero Medical Laboratory will talk to us about the activities of the Aero Medical Research Laboratory.

COLONEL BENSON:

Mr. Chairman, I feel a little self-conscious getting up again but I guess there is no way of avoiding it if you must hear about the Aero Medical Laboratory. As I stated earlier the Aero Medical Laboratory has been in operation about 14 years. I think maybe there is one rather novel thing about this particular laboratory. The laboratory is one of ten in the Engineering Division in the Air Force Research and Developmental set-up at Wright Field as the so called Air Materiel Command. I think that is novel, I think it is useful and I think it is unique. Next door to the Aero Medical Laboratory which deals in human problems is maybe Electronic Laboratories, next a power plant laboratory, a propeller's laboratory, a material's laboratory which is sort of a miniature





Bureau of Standards and so on. There is no need enumerating but such a subject just as easy the studies on the objection seat to illustrate the point that I went to make, the Engineers designed the seat themselves and the charts that go with the ejection. The Aircraft Laboratory is responsible for the seat being such and such weight, such a place in the airplane, tilted at such an angle for when fired and discharged the thing does clear the verticle circle of the airplane and our people charged with the human consideration. They have to get together for when things aren't going well once in awhile we get a little bickering but you place final responsibility for the total development but in the end it isn't a great deal of difficulty and we do make progress in that way. In almost everything we do we are varying types of engineers. I think it is good in many ways. If we want electronic gadgets, as we somehow or other haven't and they are expensive as you know, we can go next door to the Electronics Laboratory and get ten channel instruments if we want them. We get a great deal of help if we want to call a meeting or something, we can get that help insofar as cost accounting goes generally for free if I may say and that is extremely useful. The Administration of the laboratory is local in that command but again the technical supervision of its duties are vested in the Air Surgeon so that there is a sort of vertical technical or professional administration, or supervision if I may change the term. The facilities of this particular laboratory are reasonably extensive for the work that the laboratory is designed to accomplish. It has a human centrifuge that has been in operation for about seven years. I think that is the Greek record which means that it was well designed initially as the Warcentered Electronic Control, we'll just change the "s", change control mechanism, etc., but that is a very distinct and very useful instrumentality. There are not too many yet in the world. There are low pressure chambers galore, they are, of course, comparable. We do have an ejection tower and there is one other, the Navy has one in Philadelphia and the British have one





in England to study theoretical considerations and ejection phenomena. We also have some equipment now so that we can study negative accelerations. The laboratory, from time to time, has had Aircraft that was completely instrumented as flying laboratories. I don't want to steal Colonel Tucker's under because I think the psychologists have an extremely unique one. That is a flying laboratory fitted out for psychological investigations and I think almost every conceivable thing that could be instrumented is instrumented in that aircraft. Again I think if dollars is a way of expressing it, it is an expensive one, something on the order of almost a quarter of a million dollars of instrumentation in that aircraft. I think some very interesting studies will come out of there. Now I say there is an important instrumentality of the laboratory and a facility of that particular laboratory. We have had as a branch of the laboratory a facility out at Lake at the experimental base in California. It is classified to some extent, I believe I can just say that it is the mechanism just recently engineered by the Aircraft Company and it is designed to study crash for accelerative and decelerative crash phenomena. And I think that if we can ever find out what an airplane crash is, one day we will learn a very great deal. No one has yet developed just a simple thing--well not too simple possibly--as a G-time part time recorder to be installed in every aircraft who after any crash you pick up this instrument see your G-time forces, go to your instrument and determine what part of the aircraft itself or what gave way and what happened to the people and can we prevent it. We do not have as yet these quantitative agents to tell us what pulses were shooting. We are taking the 30-G now as the maximum force. It is an expensive and an extensive facility and unique. The Germans have developed something similar, had just got it nicely shipped I think up to one of the big experimental facilities near Berlin; when the Russians came in and moved all of the equipment



out so all we have are engineering drawings and which we have changed. I did mention the electronic devices, and all that type of thing that we do get a great deal of help from for the laboratories and we do often obtain facilities of that character. Otherwise the laboratory is equipped as any well-equipped, I suppose, biophysical, biochemical, physiological laboratory. I must say we do have rather expensive engineering facilities there and I am not too sure we are getting a little too far afield in engineering. I am looking at Dr. Fenn who has been there many times probably one day again will be asked to advise us on that consideration. Do we have too many engineers working with us on such consideration as oxygen-generators? We are getting in to oxygen-generators 500 meters of liquid oxygen per hour, tremendous things, and partly for fuel should medical people or people of the biological sciences be in for that much engineering carbon dioxide generators. We got into them reluctantly enough but now I wonder --tail and dog--it's a question of which is wagging which, and maybe too much of our efforts, even supervisory efforts are going into such things. Maybe we had better turn it loose now and give it back to the Engineers advising them that it is more engineering than physiological or biological. But that decision is one day going to have to be made very soon gear, clothing and things of that character. Again I don't know, the Engineers didn't do and designers are one type or the other (if I use the word Engineer generally) didn't do too well, we were given the responsibility in many of these things because the Engineers weren't doing well. I again wonder if that is proper, I think we are doing better in some respects if I may take my hope as justifiable pride but is it a proper expenditure of biological resources. It is a question we are going to have to meet and answer but possibly we do get little appeal in things that might be considered engineering under our direct responsibility and supervision. The areas of study are generally in the physiology respiration, circulation, climatic extremes, I think you





have probably seen a press release that and again, Dr. Craig Taylor at U.C.L.A. I believe it showed a picture of him in Time Magazine not too long ago exposed to a temperature of about 253°F approximately as I recall. That is a contract that we have and a lot of the basic work and work of that character is going on in our own laboratories as well and we, of course, are interested in the opposite climatic extreme. Those heat studies are predicated on the thought that we, one day not too remotely, will have hot instead of cold. And that, of course, speed frictional heat on which leads me to the thought that I go off between sort of rejoicing and despair. Sometimes I feel that we are head of the Engineers and we haven't got the airplane that goes fast enough to get the frictional heat yet at least they haven't been complaining about it. Our physiological studies are, I think, fairly well along then despair comes when they want some, what should have been a fairly simple answer, immediately and we don't have it. I do think in general though that they aren't far behind us. Survival and inflight feeding ration are the only nutritional, oh little tiny niche in the problem of nutrition which stay in that niche pretty much.

So many of our studies now have to be done in our own laboratories because they are expensive. Some of these instruments cost, I would say, a couple hundred thousand dollars as the accelerator did, they are too expensive for a university by and large. We have to prove everything in the end on a man and the danger to subjects is such that a university by and large can't underwrite a human risk. We have been fortunate so far, we have had no serious injuries but the British and German have. I think the Germans told us they have produced fracture of the spine in 32 different subjects and their early studies are on the injection status. A university cannot underwrite that again the expense they argue us the dangerous components. Then physiological studies are of great altitude and we can report, I think we have reported, that we have had human





beings in the low pressure chamber protecting the vices granted at a millimeter  
of mercury which is 106,000 feet of altitude. Now I don't mean  
to stress that all of these things are hazardous and dangerous as many, many im-  
portant subjects that lead the way, maybe some simple subjects such as parabolic-  
tax we get some greatly useful facts but many of our studies are hazardous,  
difficult and expensive because we go on in some ways and some places beyond nor-  
mal boundaries now in known and respiration for example, some are  
vacuum. I think that I would like to stop at this point. I'd like not to  
enumerate, I think we have submitted before, that before you break up your meet-  
ing you will know how many biophysicists we need and so on.

I'd like to say just one or two more things that are reasonably not related  
to the Aeromedical laboratory. I still feel that our people in uniform have the  
happiest time. We do employ a large number of scientists in civil positions. I  
think we have a greater fluctuation by and large in that group which means some-  
thing isn't quite right in the terms of employment. We steal someone from the  
university, if the word steal is , and the next thing we know the  
university has him back again so it is sort of a give and take but something that  
we are doing doesn't hold him with us always. I don't have the figures for the  
number of labor turnovers, professional turnovers rather that we have but it  
goes on constantly. I do believe in many ways that we would like to have a  
reasonable number of our people--scientists in uniform--and I most distinctly  
feel that evolution is inevitable. The fact that you are here, the fact that I  
have seen Dr. Blake in Washington twice in the past six weeks attending meetings  
of professional and scientific people in the Armed Forces, that didn't happen  
ten years ago so I think evolution, the care of our people those  
things are revolving constantly and maybe one day, and I hope not too far away,  
our channels of employment will be totally acceptable. The universities will



after in exchange fellowships with me. There are four or five bills which you must know about that are in Congress which permit almost the equivalent of

. They are not yet law but I hope they do become law. And finally we had about 400 men in uniform during the war who had Air Corps Commissions, about half of this number, or slightly more than half, were aviation physiologists, and the balance were aviation psychologists. Of the 400 it is my recollection that 235 have retained commissions in the Reserve. They are Air Corps commissions. We have done nothing as yet and maybe you should advise us. We have not advised these men yet to change over to the Medical Service Corps. I suppose some consideration should be given to them.





MAJOR KUHN: Lt. Col. Tucker, Chief, Psychology Branch, OAS, will talk to us on Research Psychology in the Air Forces.

COLONEL TUCKER: See speech.

MAJOR KUHN: Major A. J. Bauer will speak for the Chief of the Special Projects Division, SGO.

MAJOR BAUER: See speech

MAJOR KUHN: We regret that we haven't anyone on the program to speak about integration of the Officers Reserve Corps activities. I do want to call your attention, however, to the circular which I think will be of great interest to scientific personnel in the Reserve Corps, would like very much to have you read that and I think tomorrow in the discussion that part of the Reserve Corps activities which, we can be sure and which we can advise you upon, will be brought out. Also, there have been some questions about administration, Medical Service Corps and again I direct you to the circular which is a reprint of Public Law which organized the Army Medical Service Corps. That also is in the back of your booklet. And again I believe if there are any further questions we can elaborate on those tomorrow.

We have a little extra time. Colonel Goriup, do you want to reserve your talk until tomorrow? Have you any other announcements, Major Benade? There are three vouchers here. One for Dr. Miller, Dr. Ross, and Dr. Fenn which we would like to have you sign before you leave. Those of you who haven't transported back to the hotel, we have arranged some cars among us to take you back. I think it might help out your per diem which might not quite stretch to cover your expenses, in view of the taxi fare from Washington into Virginia, which is





considerable. If those of you who want transportation back to the hotel will stay here for a moment, I think we can arrange to have you taken back tonight and brought back tomorrow morning. Are there any questions before we adjourn for the day? If not, then we adjourn and will meet again tomorrow morning at 9:00 a.m. in this same room.

#### END OF FIRST DAY, 27 MAY

#### SECOND DAY, 28 MAY

MAJOR KUHN: The meeting will come to order today. Yesterday afternoon we learned that scientists and scientific workers in a wide variety of fields are being used and can be used within the Medical Department, as allied scientists. In the morning, we presented the infant Medical Allied Science Corps, which now has lost its birth red, and we regard you as no less than pediatrician, and child guidance specialists, to look over the formula that has been set up for its development and suggest alterations, and in general, give us some hints on raising this child to be a credit to the nation and in particular to the Allied Sciences Section. We have a very few short talks this morning to warm up the session, and first of all, Dr. Arthur Stull, the Consultant in Laboratory Section, Surgeon General's Office, will review again some of the aims of the conference, especially indicating the administrative set up that is now organized and functioning, at this point I'll introduce Dr. Stull. He is known to many scientific corps people as the original great white father of the Scientific Corps.

DR. STULL: Gentlemen: On talking with some of the people yesterday, I felt that perhaps the research angle of the Medical Allied Sciences might have been stressed a little too much. I think that we have to call your attention to the fact that we are running a diagnostic service in all our general and station hospitals, and



we do have a certain amount of routine work to be done. We hope, in the future, that we may have a system of coordinated research work which may be carried on stemming out from the Army Medical Department Research and Graduate School, and we may be able to farm out some of our research projects in our Army Area Laboratories, and our overseas laboratories. That is already being done to a certain extent and we hope that we can keep all our scientists interested in research work so that we can raise the standards of our routine work. In our procurement objective for the Medical Allied Sciences Section for 300 officers, about 155 of these will be in laboratory fields. The requirement for psychologists is that they should have a PhD degree. In our laboratory group of 155 officers, we need men with the PhD degree as chiefs of departments in the Army Medical School here in Washington, as chiefs of certain sections in our big teaching general hospitals and in certain of our Army Area laboratories. However, we do need a certain number of scientists with the masters degree to head departments in general hospitals. The men who come in with a bachelor's degree may start out in supervising station hospital sections or in the smaller general hospitals. We hope during the course of their Army career by special training in Army installations and civilian institutions, they may be able to obtain at least their master's degree during their Army service. At the present time, the Medical Allied Science Section has 62 officers in the Regular Army. With a procurement objective of 300, we have a long way to go but we hope that it will develop slowly and we will get properly qualified men into the Regular Army. The commissioning into the Regular Army of the Medical Allied Scientists is a forward step in the Medical Department and is in recognition of the importance of these sciences in the development of modern medicine. We have asked you to come here at the birth of this new organization,





and want your advice and support. I hope that this morning you have given this new baby a great deal of thought and we want you to give us your honest advice and support. We hope that you won't go home from Washington and forget us. We want your support from now and through the years to come. We feel here in the Regular Army that the Army is your Army, for your support, and we certainly hope that in the future you will take much more active interest in the Regular Army than civilian organizations have done in the past.

DR. WILLARD BRIGHT: How many of these 63 officers are in the higher grades, Dr. Stull?

DR. STULL: Quite a number are in higher grades. Most are in field grade now because they have all had four, five, or six years of military service. The laboratory officers numbering 42 are in the following grades: 1 Lt. Colonel; 18 Majors; 17 Captains and 6 First Lieutenants.

MAJOR KUHN: Colonel Goriup is going to omit his talk as scheduled. If there are any questions on efficiency reports, promotions, or salaries, he is on hand to answer questions pertaining to that. We were to have one other short talk from our section on the Army Medical Department Research and Graduate School. This speaker cannot be with us this afternoon, but Dr. Warren would like to elaborate on the possibilities for graduate training in conjunction with universities at the Army Medical Research and Graduate School.

DR. WARREN: I hope I'm not a little premature on this.

MAJOR KUHN: You won't be.

DR. WARREN: I have been fortunate enough to be on both sides in the occupational sense. I have my present job. The job I have now is in the Research Laboratory at the Army Medical School in Virus Diseases. I held that same job as a private





in the Army, as an officer in the Army, and now as a civilian under civil service. What I would like to say is my own opinion and is not anything in the nature of an official opinion of the other members of my department, or of the Army. Judging from the talks that went on yesterday, I think it is obvious that young people, not necessarily young in years but young in ideas, have got to be brought into the Army either as civilians or as military people to put the Army laboratory on a position which is comparable to its equipment, to its facilities and to its opportunities. I have seen a good many civilian laboratories but I have never seen a civilian laboratory that, so far as equipment is concerned and unlimited resources is concerned, can compare with the Army School Laboratories and a good many of the Aerial Laboratories. In short, what I think the Army needs is

I wonder if it is not possible to take a leaf from the Veteran's Administration set-up and to bring some sort of an academic in the Medical Allied Science Corps. I would like to suggest that two things be considered. First, the graduate students who have completed the first two years of a PhD at some university be permitted to complete their degree requirements if they so desire in an Army Laboratory.

This means that the university who after all is responsible for that degree, and it is a responsibility, that the university would be responsible for that student. The maker of the university would be responsible for that student's thesis. The Army Laboratory, the Army School, the Army Department would furnish that student equipment, training, and, if the student so desires, would furnish that student with an Army problem for his research. I think the latter thing would be necessary because naturally the student will take a problem in that laboratory, or otherwise he wouldn't come to the laboratory which is related to the Army's objectives. Now before you have students, you have to have teachers. I believe



that a great many of the Army laboratories, even our good laboratories as now constituted, are in a position to train young people at that level, the pre-PhD level. A few of the departments are. I might say I think that our department at the school is. We have a very large department, it is a new department, and it is a war baby. I think some of the schools mentioned yesterday, Dr. Johnson's department, and some of the Air Force schools are perhaps also in a position to actually teach people in physics, physiology, and biochemistry. A good many of the other laboratories would require the hiring of a civilian scientific director or civilian scientific teacher--maybe six or eight people over all. I am thinking now of the Aerial laboratories and the Army schools. Maybe about a dozen all told. The main function would be to bring some sort of an academic, civilian professional type of training into those departments. Now the beginning of the PhD degree is purely a university function. The man's work would be reviewed by the university, the results of that work that would benefit the Army would be the property of the Army, of course. What is "finished" with the PhD? What is work in that laboratory for a year, or two years, or even three years in some cases? I think you will find that they regard themselves as I do, a civilian now, almost as members of the Army. I think if you talk with those people who have just gotten their PhD, a second lieutenancy, or a first lieutenancy, at \$4000.00 a year or whatever it is, and say to him "Well, now look. You don't have to stay if you don't want to. We would like very much to have you stay and go on and use your own laboratory, your own equipment which you have been using here. We would like for you to join the Army. In some way we will waive this requirement for taking 18 months overseas so you won't have to stop your work. You will be a full member of the Army and at the same time you will enjoy the privileges you





had as a civilian working at a graduate professional level." I would venture to say that a large percentage of people who got their degree in that fashion would be perfectly willing to stay in Army laboratories or Allied Sciences. Now is there precedence for all that? There's considerable precedence. Two of the people in our department, one man got his PhD from the University of Pittsburgh, and the other man got his PhD from Columbia University on the basis of work done in our department during the war. We have had two fellows from England who have turned out to be very fortunate choices. One was a fellow of the British Empire Cancer Fund, and the other a fellow of the Rockefeller Foundation. They want to learn virus technique. One was a physician and the other a PhD in . . . They want to learn virus technique and they came to our department at the recommendation of Dr. Sivers, I believe, and after three or four months of basic training, if you want to call it that, rotation around the various sections of the department, they were given a problem. One man worked on the development of a vaccine for Russian . . . He did a beautiful job. He did a job which benefitted himself, and which benefitted the Army. We now have all the data we need to know about making that vaccine. The other man worked on certain basic aspects of poliomyelitis. Unfortunately, those people were with us one year, and the other slightly less than a year. So as I say, the precedents are there for this type of assessment. I do believe that the Regular Army is not going to get young people at the PhD or post-PhD level, no matter how glamorous the recruiting posters may be about travel and so on, unless they can guarantee to them the freedom of activity and the freedom of research that you enjoy in academic set-ups. I think the report has pointed that out very thoroughly, but I think this system can be worked into Regular Army framework very easily and will almost guarantee the 60 or 300 men that you are going to need in the next five years.





MAJOR RUHN: Now we'd like to make the conference as much an all civilian program as possible. Therefore, we have decided to ask Dr. Blake if he will act as discussion chairman for the remainder of the day. Before turning the chair over to Dr. Blake, let me remind you again we have a recording machine, that we'd like to have you speak one at a time, identify yourself, and speak toward the nearest microphones. The Captain up at the end of the room is regulating volume, and so on. It isn't clear in my mind how close you have to be, but apparently you don't have to be too close. Speak towards the microphones. Dr. Blake.

DR. BLAKE: Major Ruhn, Gentlemen. I suppose I have been selected to act as chairman for the rest of the meeting, since I'm one of those MDs who I can assure you is fully cognizant of the fact that all advances in clinical medicine and medical science are based on the work of such gentlemen as you are in the fields you represent. We have heard yesterday and a little this morning the concise and brief description of the new Medical Service Corps, particularly the Allied Sciences Section and the research and the development programs that the Army and the Air Corps are carrying on and hope to expand as part of the defense program. In only one remark yesterday by Col. Whayne, if I remember correctly, did he remark that perhaps he should be saying Armed Services instead of the Army and the Air Corps, and I hope the officers present today if I occasionally say Armed Services, instead of Army and Air Corps, will take exception to it, because I think we should appreciate from Dr. Bush's remarks at the opening of the session yesterday that that is the forward look that should be taken. Now the main problem, of course, which has been brought to our attention, is the problem of personnel and the requirements of scientific personnel for the Medical Service Corps, Allied Sciences Section. We have heard something, particularly in Dr. Warren's remarks this



morning, something about career opportunities. I am sure that that is one of the aspects of the subjects before us that many of you are most interested in if you are to discuss with young men in the Allied Science field, the career opportunities either civilians, or regulars, that the Armed Services may offer. So that I hope in the rest of the program today, and I am sure that this will be so, that there will be perfectly free discussion without any inhibitions, because I am sure that is what the Armed Services wished to have. Both discussion and views and any pertinent questions that you may wish to raise or bring up. Now in this discussion I hope you will excuse me if I, when somebody wishes to speak, or raise a question, do not immediately recognize all of you by name. While I know many of you, I regret to say that I do not know you all by face and name together, so that if you will please follow the usual practice of announcing your name, I think the recorders would also like to have that. I'll only make a few more random remarks before turning the discussion over to you which I jotted down during the course of the meeting. Now I'm sure that we all recognize whether we belong to the psychology or psychiatric group or not, that one of the most important factors involved in attracting people into careers in the Armed Services is the problem of motivation, and it has seemed to me in listening to the discussions that one had to bear in mind that there are perhaps roughly three types of persons, scientists or young scientists, or groups if you will, that might have somewhat varying motivations. Now there would be one group, that particularly referred to by Dr. Stull this morning, who perhaps would have a major motivation of service and more education. In other words, the application of science to the work involved in the Allied Sciences Division of the Medical Service Corps, and there would be at the other extreme the individual who was predominantly motivated, if not entirely, by the desire to devote his full time to basic scientific research.





And then you would perhaps undoubtedly, have an intermediate group who would like to combine the scientific research with practical applied service of scientific facts to the work of the Services. All or any of those, of course, might also be interested in the problems of assisting in educational programs of the Medical Service Corps.

Now I'm tempted, of course, altho this is obvious to all of you to make the remark that I hope in the thinking of the Armed Services they realize, as I am sure they do now, that they can't have their cake and eat it too. They ate their cake and tried to have it during the second World War. As a consequence, as we all know, there has been a considerable gap deficit in the training of young men in the sciences who should be available for the work to be done in the future. And that cake is not only somewhat scanty at the present time, one realizes the competition for young men in the science fields and it needs to be more abundant and it needs to be fresh cake rather than stale cake. By that I mean young men being brought in as Dr. Warren has emphasized. I think those are the only random remarks I will make. I would like now to, in order that this meeting, as Major Kuhn has suggested, should not break up without some concrete results to help The Surgeon General, to suggest that it would be desirable to appoint a small committee who would keep track of the suggestions and proposals that come out of this meeting and draw up as a result of that, a report which then could be circulated for comment or correction to members of the group and, naturally, given to or sent to The Surgeon General as the concrete suggestions of this meeting. I will go ahead and do that and I will ask Dr. King if he will take the Chairmanship of that committee, and the other members I would like to have serve if they are willing, are Dr. Parr, Dr. Cory, Dr. Hans Clarke, and Dr. Shaffer.





Major Kuhn has asked me to say that if after the meeting is over, you have any further after-thoughts that you haven't expressed today, that he will be very glad to receive them in writing even before the committee reports are circulated if you desire. They should be sent to him, Major L. R. Kuhn at the Army Medical Service Corps, Room 3C548, Pentagon. I will now throw the meeting open to general discussion and questions.

DR. FARR: I would like to say a few words of a general nature, and I think my purpose for what I have to say -- my name is Farr. For 36 years I have been connected with the medical profession, as a student, and as a teacher, and I am naturally very much interested in all these problems. What I want to say is that a baby never talks back to its parents, or at least not until it can be sufficiently developed as to be articulate. I think our hosts have been very generous in not in any way pointing any criticisms at us, and I think we should enter this discussion with a feeling that possibly we all need to get together on these problems. That point I know you will agree with. I hope that my colleague representing the American Institute of Biological Sciences (I don't see him just now) a physiologist from Rochester down there at the corner of the table, will tell you in some detail of a little of what is being done in the new organized American Institute of Biological Sciences. I will say nothing more about that except to quote a paragraph from a report prepared by the Committee on the National Utilization of Biological Sciences and signed by H. S. Wigodsky, Chairman. That paragraph I think marks one of the problems that we will have to work out. I'll read that paragraph just as Wigodsky wrote it. Its good, please give him credit.

"In order to discuss intelligently the question of the utilization of biological scientists, it seems advisable to attempt to describe their training and their



work, both in peace time and in war. Similar to other scientific groups, the biological scientist receives in addition to his technical and professional education, a long and rigorous training in logic and objectivity. He is taught to observe carefully the natural phenomena of new organisms, to record meticulously all that he sees in some sort of logical fashion, and to attempt to synthesize these data into new ideas. These interpretations are, in essence, logical deduction, and the scientist utilizes the utmost care to demarcate clearly between interpretations based upon objective data, and conjectures which in many instances are termed theories. The conjectures or theories actually represent extensions of the scientists thought processes beyond the objective interpretation warranted by his data. Having formulated a theory, the true biological scientists will then set about to conduct additional experiments and to make additional observations to determine whether his theories are warranted or not. During the course of these manipulations, the biological scientist, like all other scientists, expects fellow workers to take sides or issue with him; to repeat his experiments for themselves; and, in many instances, to make far different interpretations from his own. He, himself, is free to criticize his academic superiors and his fellow workers, but only on the basis of objective data. He enjoys, therefore, what is commonly known as academic freedom. We see in these days one of the most remarkable in the history of science and to get together tax-supported organizations, tax support into the environment of the so-called universities. There are many good universities today, for instance it might not be too far distance when we might have to ask tax support for the maintenance of universities. My own says we will then cease to be a university. We take with a great deal of acceptability in all manner of apparatus in the government, in all manner of technical help, and some of the universities, I regret to say try to earn to extent, a very large overhead for the operation of





research

(Can't hear rest of speech)

DR. LAFYER: As many of you know, the organization that I am representing of two facts. First the Army during the last war, that we were the forgotten man as far as the Army was concerned. We were called in in an emergency to help out and then not given an opportunity for recognition to do the work. Secondly, that which Dr. Parr has already brought out, that many of the older scientists in the scientific field have failed to appreciate the professional and economic problems of the young biologist getting out of graduate school and thinking of opportunities in the field. The evidence on the part of these societies to take any concrete interest in these problems. The biologist in the Army felt he had no friend in the Army, and his civilian friends, the leaders of the scientific societies had forgotten the Army problems completely at least as far as we in the lower level were able to make out. as we thought that organization was established to try to improve the lot of the biologists not only in the Army, but outside. It is not surprising, therefore, that we have been very sensitive to the development as it affects the biologist in the Army as well as outside. We were one of the few biological groups, and I think the first to take contraceptive action, shall we say, as far as the birth of the Medical Science Corps was concerned. It was my privilege to represent our organization in talking with Margaret Chase Smith, Congresswoman from Maine and Chairman of the subcommittee that held hearings on this bill. We have been active in opposing the establishment of the Corps as it now stands, but once established we have tried to do what we could to help out and to make it work. I have had





the good fortune of working closely with several men in the Pentagon Building here. It was decided some months ago that if perhaps we could get the feelings and reactions of the men in uniform who are still in the Corps, we might find an improvement in the conditions over those many of us knew during the World War.

Within the last month, with the knowledge of The Surgeon General's Office, I have written to sixty men whose names were supplied to me by Colonel Goriup and Major Bunn asking for their reaction to the set up as it now exists. And so in these first remarks, I am trying to represent the second, first lieutenants, Captains and Majors, anywhere from Manila to Panama to Europe and back again. I have had letters or telephone conversations or talked personally with over 30% of the men now in the Medical Service Corps in the Allied Science Section we are discussing here. They all say that assignments are correct for the first time in their knowledge, they know of no men that are mis-assigned, which is commendable and certainly a step forward. They have said that for the first time, biologists are represented in The Surgeon General's Office as we see with Major Bunn, Major Bunn, Captain Lee's successor and certain others which is something that was not true during the last war. All the respect to the excellent work of Colonel Hardenbergh. During the last war our sole representative in the Surgeon General's Office as far as we felt, was an engineer. The men who did the most to build up the morale of the Sanitary Corps during the past war were engineers such as Col. Blaw to whom I would like to pay tribute now, we did not have biologists in the higher echelon to represent us and we were dependent upon the cooperative interests and sincere interest shown by these engineering men whom I have mentioned. As for other situations, they say they would like to see the educational



program which has been mentioned that some of the men are now in graduate school  
suspended. It is recognized by all of them that it can only be remedied when more  
men are in the Corps.

In line with what Dr. Tarren has said we have one of the two men in question  
in training with us. You cannot set down a set rule that they have to have two  
years of graduate work before they start their thesis. Each case is individual  
and must be evaluated individually. We have had different members of the Armed  
Forces, none of whom are present now. I will say that they call us up and say,  
"Why are you making so and so take this particular course, it won't do him any  
good." If our Department continues to have suggestions and criticisms from  
persons that are outside, it is going to make us hesitant to cooperate too much  
requiring the men to take certain basic courses in bacteriology which we feel  
will qualify him for better bacteriological work. It can be worked out. We want  
to work with everybody and geographically, we are located in a position, as is  
George Washington, where we can do a great deal of it and we are willing to do  
so, but I drop that hint merely to show one of the pitfalls that could very easily  
develop. One man writes, "The situation as far as the Medical Service Corps is  
concerned, biologists in the ASC is concerned, is worse than it was under the  
laboratory corps. Our identity is lost more completely and we are as far, as  
most medical men are concerned, not biologists, but administrative men. We are  
not regarded as professional men but merely men who are taken in and accepted  
by the group." One man wrote "There must be a complete separation from the  
ASC, and establishment of a professional corps, and there can be no compromise  
if we are to do effectively that which we wish to do". In the last year, I have  
had letters from well over 200 men from the rank of second lieutenant up to  
full colonels in the former Sanitary Corps in addition to letters from the men





back in the Corps. I find only two who believe that the present set up of mixing together a professional group with a non-professional group, believe that that set-up can work. As one man said, "On the basis of qualifications, every ESN in the lab should be commissioned as a second lieutenant if we use the same qualification for membership throughout the WSC" and goes on - "If a man is to advance financially in the Army, it is better that he forget his professional interests and go to an enlisted man, to OCS and other branches of the service and perhaps he will get to a position where he can have rank and salary commensurate with his ability. That was a letter that was drafted by four members of the WSC which I received within the last week or so. But I still know many cases of not having respect for commanding officers, etc. One man tells of being ordered to buy 500 fly swatters and having to command a detail for 8 hours a day on several consecutive days swatting flies. When the medical officer left the post for a few day's conference, he writes, I was able to go in and clean out the fly breeding area in less than three hours time which I had been forbidden to do previous to the man's departure. Now these isolated cases will exist, will make good stories, and make us all smile when we hear of them, but we can tell a lot of stories especially some of us who have served under one officer whom many of you know, and could keep you going for numerous hours, but the fact remains that the men now in the service in the biological sections of the WSC are desirous of a separate professional corps. They feel that it is the only way that they will gain recognition that is necessary for the proper performance of their work. I can say that most of the men who served in the last war in the Sanitary Corps, regardless of rank, and I say from second lieutenant to full Colonel and I think there are at least two of those colonels here at this





table, feel that such a separation is desirable. We who work in the Corps are proud of it. Those of us who served in certain areas develop a stronger Corps pride than others and there I think much of it was due to the activities of Colonel Blew. We hated to see at that time a Corps unprofessional or nearly so removed from the professional status. We hated to see that move taken during war time conditions of granting commissions of second lieutenants in the Sanitary Corps. We realized it was necessary, so we accepted it, but we hated to see it maintained after the pressure of the war time emergency was removed. Many people have written suggesting that we abolish second lieutenant's commissions. Those of us in our society would like to see a master's degree as a minimum for commissioning a man in the Medical Service Corps, or whatever the Corps may be. We want to see professionally trained men even in the position of a man who has had more training than the average bachelor's degree gives

the work. Only two weeks ago the commanding officer of a large establishment not far from here gave a verbal release that the head of the Department of Parasitology must revert to an MD degree. We wonder now if the Parasitologist would be interested in going into the Army if he finds that certain positions are closed to him either by directions from The Surgeon General's Office or by regulations by the Post Commander, verbal or written. It is a situation like that that makes a qualified biologist hesitate to put on a uniform, regardless of the quality of my work, regardless of how hard I worked or how long I stayed at a certain post I could not be designated as a bacteriologist because I did not have an MD degree. It takes the enthusiasm out of working. I am not alone in that. There are others in this room that are in the same situation. We did not mind working





under or with men who were qualified, but when they bring in a man who was trained for a few days in water analysis and the fundamentals of bacteriology and put him over you, it hurts a little. This fellow comes out of the Army Medical School during the war with a PhD in Malarialogy and asked for an overseas assignment. He was told, well we have some Malaria Survey Units going out. They wanted you out now as Commanding Officer because that has to be a medical man. Whom would you suggest to head that group? He knew of no one. Now you train a medical officer, recommend him as the commanding officer of a Malaria Survey Unit and you may go along as his assistant. Now it is incidents like that that has made the biologist hesitant to come into the Army. Now we recognize that you may have the most cooperation possible here in the Pentagon, but until the men in the outlying posts are educated as to the value and proper use of biologists and made to accept them by education or otherwise as professional men, you will have difficulty in attracting well qualified men because they want to go somewhere where their professional ability is recognized. The society that I represent believes strongly, and about 25% of our members are former Army men, that there should be a separate professional corps. They know that the Army would profit by it. We feel that there are persons in the Army who know that such a move would much strengthen their cause, and we do know from conversations with certain politicians on the Hill that such a move would be acceptable to them. Margaret Chase, whom I mentioned before said last year the thing to do was to pass the bill as it was introduced then if changes are justified they would certainly be glad to consider those changes. It was pointed out yesterday that the Medical Service Corps was the only corps that had restrictions by legislation as to the number of officers and so on. I think only 2% colonels are allowed in the Medical Service Corps, in other corps of the Army Medical





Department & % colonels. I can't quite figure that out. I suggested that the Surgeon General's Office that bill. So while they have legislative things open now, they or their predecessors were responsible for those strings being put present term.

statement of Dr. Parre with reference to salary. I think if you would look in Bulletin 21 in the back you would find out that an extra \$100.00 a month is given to Medical and Dental officers, and Army and Navy Public Health Service which does not include the biologists in the Medical Science Corps. That

brought out time and time again to mean not only in so far as the Army is concerned but also as far as Public Health Service is concerned. We do not like it and we have opposed it. Looking to the future we have already written the Office of National Defense and various legislatures suggesting that if the draft bill goes through, and it undoubtedly will, that some provision be made for the continued training of biologists and other scientists so that we will not have a situation five years from now that we have today of where a man that should have his PhD degree or nearly so, are sophomores in the university. Medical men were allowed to complete that training in uniform, biologists were not. This certainly should not be repeated. We hope that by action of anyone here that this will be prevented in the future.

CHAIRMAN:

is the question of a second professional service corps and the second one in your very last remarks concerning opportunities for continued training is out as I earlier eating the cake and then expecting to have some later. I wonder if there is anyone who would like to talk on the first point about the separate professional service corps.







DR. OTTO: We have a good many graduate students each year at the present time we have 18. All but one of the men are veterans and I think that much can be learned from their reaction. Naturally, in that training for the doctorate, the type of work they would like to do after graduation comes into discussion early. Would they like to do teaching, would they like to go into research, or what would they like to do. Without exception, the present crop would like to do research and that is true over the years. Many of them recognize and actually welcome the opportunity to have a certain amount of teaching or laboratory responsibility, or service laboratory responsibility, aiding in a hospital laboratory or a state laboratory as a corollary not only as a job to be done but as an opportunity to make their research better and record it up more. So most of them are not looking primarily for straight research jobs but they would like a position which offers them a future in research. Since these men are veterans, the question comes up repeatedly. "Would you like an opportunity to go into one of the Federal Services?" But the answer--these men have said without exception, "Take almost anything else but a Federal job. We got fed up with that during the war." In the last few months, there has been somewhat of a change in that attitude, but the changes come only with reference to the Public Health Service. Men are beginning to recognize that in the Public Health Service a set-up has been provided whereby a man may pursue a research career with some opportunity of advancement with no definite ceiling on where he may go either in the direction of his research or in the opportunities for professional and monetary advancement, but they have seen no evidence that that change has taken place with any rapidity in the Armed Services, and these men, I think, see what happened to those previous crops of men -- some of the graduates of our schools. For instance, Colonel Andrews did hold a high rank in a position of responsibility, although not a medical man in the past war, but they all know that Colonel Andrews



had proven himself in a civilian job before he came into the Army. The Army looked around and they said, "he is one of the few men available for this job." They ask one                    he would have proven himself had he been in the Army from the offset. They look at some of the men who went into the Army as young men and what happened to them. They end up in                    pockets and if I may say so the protocol set up here does nothing to relieve that doubt. In the first place, those men without any criticism of the other services allied to the scientific group, - those men are tossed in the same pocket with medical administrators, optometrists, etc. They also recognize that there is a ceiling on the rank that would be available and it seems                    in a set up like this that the medical administrators are apt to be administrators at the top as the top brackets are almost automatically closed to those men. Now a few of them actually look forward to a career in administration which goes with a higher rank. They would rather remain in scientific work. They like to see the rank come for scientific work, not for administration. And yet your pocket is closed because those jobs are actually most administrative jobs and they are naturally going to the men in the administrative divisions as set up here. And I think that the only outlet that has been shown to be available for young scientists in the Armed Services at the moment are the civilian positions. I know that a number of men who have gone back into the service as a permanent basis in the post war period, have dropped the commissions they held during the war and gone in under civilian basis, not only their own choice, but at the recommendation of the Medical Corps and other officers in the Army who recognize that those men couldn't advance, that that includes not only a                    scientist, but includes many of the positions which have gone on a permanent basis. So that it seems to me that we have not answered basically here the problem that is raised. I think that we have all recognized that in the





formation of a hospital, I don't care where it is, any hospital should be commanded by a medical man. I don't think that any parasitologist or biochemist necessarily looks forward to commanding a hospital. He expects to be under the command of a medical officer rendering his service, but he would like an opportunity to head up his division under that set up. He would like an opportunity to do research and in research he should not be under the command of some other branch, necessarily. That doesn't mean that in the research set up, the Commanding Officer may not be a physician but he might equally be a biochemist or a parasitologist. To make him automatically subordinate to a medical professional group, and what is still worse in my opinion in this present set up, is the probability of being subordinate to a man who is not even scientifically trained in the set up you've got here. I think you've got to set up some division for the scientist. Whether that breakdown should be biologist, chemist, or whether it should be a corps of scientists is something that I haven't given a thought to so as to make suggestions. I think there are arguments pro and con on that, but I think you do need an opportunity to build a scientific corps independent of other corps to work with, and in many cases under some other division of the Army, but to have the same degree of professional freedom which is possible under the present Medical Corps set up which is not provided in this. And I think that that is one of the things that the students that I've seen come through have brought back as a constant criticism, yet from what little information is available to them as a criticism of possible future careers in the Army or in any of the Armed Services. And as I look at this, I can bring them no answer to that question. As I see it, what you have done has pointed out even more sharply the criticisms they offered in the past as to the possibility in the future. Thank you.

CHAIRMAN: Is there any further discussion on this point?





DR. L. G.: In order for me to comment in general on the topic subject matter under discussion, I should like to commend the spirit that has been shown on part of the officers here, in inviting constructive suggestions whereby the scientists can make their best contribution to the Armed Forces responsibilities. We appreciate also the very frank spirit that has prevailed in these discussions. It seems to me that one of the basic problems that is not being installed in the present corps' administration is sufficient recognition of the development of the individual scientist. And that is essentially an individual program. It's almost impossible to do it with an \_\_\_\_\_ approach. The Public Health Service has worked out some very satisfactory techniques which contribute to solving that type of problem and I would commend very careful consideration of the program that they have developed for providing liberally of training of young professional personnel within the service, but with enough freedom for development in their various specialty fields and without restriction on promotions in regard to a specific degree. For example, it seems to me that a young scientist whether he be a biologist, chemist, or a physiologist or even a man who looks forward to a medical specialty should have the privilege at the PhD or MD stage of his training,--Go to a research and training center where he will be in contact with men whom he respects in highest professional regard. He should have there the privilege of working in a stimulating environment toward his own development. I see little opportunity of that type at the present administrative step. It means that some reasonable insurance of stability in man's \_\_\_\_\_ would have to be provided when he enters the service or at least that he should have, after a preliminary trial period, an opportunity to make such a plan and have it followed. In regard to the Graduate Training Program, it seems the same thing holds, etc. If a man has a master's degree and has a record of fine attainment, the risk that he will not do well in a Graduate



School assignment is very low. Therefore, it seems to me that getting a young man trained in the army or in other branches of the armed forces should be kept to a bare minimum, and should not involve the hazard of going out and putting up with a routine adjustment training program or the throwing of an assignment into the area where he has almost no opportunity for a professional scientist. Or to put it another way, it seems to me that the routine of training into the Corps follows closely the routine training established for field officers or regular officers in the armed forces but he wants again the variety of experience in terms of area, branches of service and all that sort of thing. The outsider, the contractor, that can speed up this type of production. He wants to go into an area and work with a definite group where his professional opportunity is at its highest and anything that would take him out of that in time or subject matter.

Next, I would like to comment on the matter of opportunities for research and publication which is part of the same problem but not comparatively the same problem. These young men who had opportunities for professional problems from three to five years beyond their PhD or MD degree is the most critical in all their training program with regard to their worthwhile contributions into the scientific realm and if they had some assurance and encouragement on that score it would mean a great deal. And now if a man does not have an opportunity to publish first rate scientific papers within those next few years beyond his degree, it is quite an experience to handicap. Such a thing not only means a better development of personnel but it means a better respect and regard for opportunities of the armed services on the part of academic men. So I think there is a very mutual for that kind of opportunities for  
the sake of the services and provides the country at large with service at the same time. I think some way should be found to avoid what is clear to some of





us now has a specifying influence of the limitation of feeling placed upon the man in the Medical Service Corps. Actually if he comes in with a first lieutenantcy, the opportunities for promotion do not look very exciting in terms of the two percent of the positions with a Colonel ranking as top with a small allowance for Majors and Lt. Colonels. In other words, in particular, a man is really a promising young scientist and he comes in as the rank of a first lieutenant. It would be with administrative responsibility in the top bracket, captaincy or up. He has only about one chance for promotion while he is still working as a scientist; beyond that stage he must either get out or go into administrative activity in which he is no longer working as a scientist professionally. That, I think, has a terrible effect on the group of young scientists. The way to correct that is not a simple one I know, but I think it should be recognized for the serious import in the planning for the effect. The matter of pay differential is certainly unattractive. The matter of specific limitations and responsibility such as the highest rating being that of an Assistant Laboratory Director again is very discouraging. I think one should weigh in that regard the fact that most of the scientists now have opportunities far beyond what this comparing feeling permits if they go into other opportunities. For example, if a man goes into professorship in a University, or in the Department of Agriculture, or into the Public Health Service, or into the large industrial research organization, there are no such feelings to hold him back neither financially nor professionally.

Next I would like to comment on the importance of this aspect in regard to the influence it has upon recommendation that the university professors make in talking over plans with their more promising Ph.D men and the graduate student. If the university men are not yet confident that there are





excellent opportunities ahead professionally for these young scientists, they will very effectively discourage them, it seems to me, from going into the opportunities that look good at the first glance to a young scientist. It is only natural for these young men coming out of the schools to look to their major professors for advice in regard to their next position. Unless some way can be found to maintain a very favorable attitude on the part of the university men then there is a serious                      in getting good men to come into the service.

I would also like to suggest for consideration changing the name of this organization if it is to be maintained. The very name itself it seems to me conveys                      which is unattractive to a young scientist. I say that with the best of feeling toward the actual facts of the case whereby these scientists could contribute to medical science. The name Medical Service Corps implies that they are just service men who man the boat and when they look at the chart and see the limitations imposed automatically against their professional                      it emphasizes that unfavorable feature. Despite the fact that these professions are in this category, the medical men do not realize that quite as clearly as the scientist. It seems to me, therefore, that the name itself is an unfortunate choice.

I would like to suggest for consideration the formation of a Science Corps. This it seems to me would oblige no further difficulty                      I have not given it sufficient study and I won't go into details as to what pattern such an organization should take but it seems to me that it would permit development of                      in the armed forces which would avoid most of the difficulties that we see in the present organization. It would give the men the highest professional standing in these allied sciences opportunity to develop the full responsibility in their profession and I think it would also make possible the very cordial relation by which they could be assigned to work with





medical research teams either in the field or in a research laboratory. I would still not control it automatically or put a ceiling on their professional development. I think it would make toward dependent strengthening of the active work of the Medical Corps.

I would like to suggest further that there would be a definite gain in actual work of the different units in the Corps and in public relations acceptance and good will toward the opportunities of the corps, if there could be an advisory group set up representing the highest professional men in their respective areas in which these young men would work. That has been very successful in the Public Health Service Study Sections, very successful in the National Research Council, and I think it is coming to be a pattern of organization which has proved itself and could be applied here to great advantage. Those men could counsel with the officers in the Armed forces and counsel with the men in these different positions in regard to the strengthening and development of their programs. Thank you.

CHAIRMAN:

Your last suggestion about an advisory group certainly prompts me to remark that there is excellent pattern for that as exemplified by the Army Epidemiological Board set up in the Preventive Medicine Service at the beginning of the war which I have a feeling, perhaps I shouldn't say it, an opportunity was provided to meet a great many of the problems involved here that you and others have raised in the discussion. That raises the question also, of course, right away of the question of civilian opportunities which are part of our program for discussion. Most of the remarks so far have been directed toward the problems involved in officer opportunities. While we would like to go on with that, we might bring into it if possible at this time some discussion of the civilian opportunities such as those Dr. Warren has spoken of and which he represents. Who else





tail like in tail in line group!

#### Dr. DAVENPORT

Before we leave what I think is the most important part of the discussion, I would like to say that the Laboratories Division during the war was very much concerned with the assignment of the Sanitary Corps officers. We were a small group. We had to do with the commissioning, the evaluation and assignment of our 2500 medical laboratory officers, that is, medical corps and sanitary corps. In defense of what Dr. Stull was attempting to do during the war as a Major in the Sanitary Corps, assigned to Laboratories Division, he directed a great deal of effort toward seeing that Sanitary Corps officers were properly assigned. The effort of that small office could not be great. When we heard that a Sanitary Corps officer was being used in an administrative or in a position for which he did not wish, and for which he was not trained, correspondence and what other pressure that office could exert was exerted. An attempt was made to see that the regulations providing for the promotion of Sanitary Corps officers were followed and again by correspondence with Commanding Officers they were reminded when certain Sanitary Corps officers were eligible for promotions to see that they were promptly promoted. There is a fundamental change which has to evolve in The Surgeon General's Office before anything regarding the structure of a Science Corps will have any effect, and that has to do with the recognition of a Medical Laboratories Division within the Surgeon General's Office, that is, during the war a Medical Laboratory Division was assigned or was located within the Preventive Medicine Service and represented the tail of a dog which, in size, might be envisioned The Army Institute of Pathology, the Army Medical School, the field installations representing medical laboratories were all supposedly administratively under





this small unit in the Preventive Medicine Service. In January 1947 there was held a (1st) national laboratory equipment conference. On the agenda for that conference there were questions on laboratory organization, laboratory function, as well as on laboratory equipment.

We all realized, Medical and Sanitary Corps officers, that until there was a direct recognition of the entire national laboratory field at a higher level in the Surgeon General's Office, that is, at least at the level of the Medical and Surgical Consultants, that none of the things that we were striving for would be accomplished. For instance, Sanitary Corps officers and in the field actually had their laboratory Occupational Speciality numbers assigned so that they were titled with a job which might be more fitting to some other necessary position or a post. There was no need to think that officers would apply. There was no one high enough in the Surgeon General's Office, who might see that such a condition might be corrected. The idea of that feeling and that would be accomplished by a recognition of a Medical Laboratories Division at a higher level in the Surgeon General's Office, there was this specific recommendation made at that conference last year that the Medical Laboratories Division in the Surgeon General's Office should be established as an independent unit at least at the level of the Medical and Surgical Consultants in status. That was agreed to unanimously by this conference of approximately 60 officers who were there on duty and took off on who had by that time left the service but who from very intimate experience had a great deal about the operations of the laboratory during the war.

The other important recommendation that came out of that conference was that in order that there be established again at the same level as the Medical and Surgical Consultants a laboratory consultant to whom there would be assigned all laboratory work. In March 1947, I wrote to General Bick, stating that I thought



the decision concerning the establishment of a theater medical laboratory consultant, independent of laboratory units and operating at a level without a professional consultant and a recommendation that a medical laboratory unit in The Surgeon General's Office, as a division or branch, be granted the same status as other medical consultant groups, deserved particular mention. That is quoted from a letter which I wrote to General Kirk after that conference in March 1947. I mentioned already that that conference which represented many officers on duty, many former officers, had agreed unanimously to those two recommendations. I sent this letter in March of 1947 to remind those in the highest positions in this office that these were the recommendations, that they were unanimously agreed to, and so far no change has been made in the organization in The Surgeon General's Office which recognizes any higher standing for medical laboratory units. Until such a higher status is recognized, very few of the recommendations we can make today will have any value or none will come to any successful conclusion. I wanted to mention that before we left the subject of administrative structure of the medical laboratories in The Surgeon General's Office.

DR. MURPHY:

I just want to speak briefly about this question that Dr. Blake threw out at the beginning with reference to mobilization because I think that is quite basic in all of organization and procedure. I think his contrasting the two extremes of service and research are very sound and I would like to account briefly the indications that I think are obvious to anybody expansion. There are certain opportunities that he wants to be sure of before he joins the service. He wants to be sure of economic and security and opportunity for advancement. service and research groups, I think there is a very important difference in motivation. He





shall have to visualize quite clearly the structure or the set-up that generally takes place in which research groups, and primarily with scientific material in scientific organizations, might feel at home and are going to want to participate in.

I think it is important to remember that a man who is trained for science, whether it is in medicine or in graduate school, when he gets his degree in any of the medical allied sciences, it is primarily a man that is motivated by curiosity. He has originality. He certainly will never make a successful scientist who will contribute to understanding by breaking through the barriers of ignorance and procedure which are. He's got to have certain strong individuality or it can't break through. Now are we going through the major set-up in which that kind of an individual is. That is a difficult problem because obviously in the nature of things in the armed services there have to be a great many of the which are inherently diagrafocal to man, of this individualistic curious type of mentality and I don't know enough about the conditions in the Army to make any suggestion at all. I think a lot of good ones have been made already. But I do want to bring out the fact and achieve recognition, security and promotion.

#### DR. GRIFFITH:

I have asked myself three questions and they all have very definite answers. The first, is there a need for scientists in the army? That need has been demonstrated. I am sure we could answer yes to that question without those demonstrations. The next question is a little more difficult. Am I personally interested in this need? Do I care whether the Army gets scientists? The answer is definitely yes. I think we have an opportunity here to recommend





procedures which will greatly benefit the Army. I've had an opportunity to do something to offset the feeling which is rather general.

Now the third question is the difficult question. Admitting that there is a need and I am interested in helping to obtain scientists for the Army, I certainly am wholly in accord with it on the basis of personal experience. Scientists must have professional recognition. There are a number of other angles that I would mention and not dwell on other than to give it my hearty support. The question of MOS numbers has come up. I do not know what the situation is at present with respect to the Medical Service Corps. I notice in the booklet that nutrition officers are those with MOS numbers of 3316. Now there ought to be at least two MOS numbers for nutrition officers and for scientists in general in the Medical Service Corps section. I think it is true that men who can be rated as specialists in the Medical Corps draw 25% increase in pay. I don't believe--possibly that never went through. That was proposed the last I read about it. But there ought to be more than one category for a nutrition officer and that certainly should apply to certain other groups, if not all of the science groups. I don't know whether the MOS numbers describing the nutrition officers, e.g., is included in any T/O's as Medical Service Corps officers. Regardless of the continuance of the Medical Service Corps as a separate Corps or the formation of a new Scientist Corps, these positions must be in T/O's. I was sent to the European theater in the last war, and a total of some thirty nutrition officers were sent to me. A place was made for me in the Office of the Chief Surgeon. There was no place in any other Army installation for an Army nutrition officer on the basis of a permanent assignment. Those were made largely on the basis of personal persuasion and that had its limitations so that there were certain men who remained in depot organizations for months and months until it was possible to persuade the surgeon to accept one of them.



men to a minor unit in his organization and then have him work out of his own office. In other words, there was no place for these men in T/O's where their time and service could count towards a promotion and they would have a sense of belonging to a unit. I don't know what the Army policy is now with respect to the MOS numbers, but certainly either in the Medical Service Corps or in a newly formed Professional Sciences Corps, there must be recognition of the types of these men.

One other question that I'd like to bring up was referred to only briefly yesterday to my disappointment and that's the relationship of the reserve corps to the i.e., the position of the scientist in the reserve corps as it is now in the Medical Service Corps. It seems to me that the program might be developed of returning men to the reserve and once in the reserve corps of attracting them into the Regular Army. If their training periods as reserve officers were

with that in mind, of giving them a first-hand demonstration that there is a place in the Army where they can function efficiently with value to themselves and to the Army. I'd like to hear some more discussion of the reserve corps activities as applied to this particular group.

DR. LEVIN: (Unable to understand any of record.)

of the scientists. It is well to say here that we have on paper that a man who will get such and such an assignment will do such and such work but we have had numerous cases where the man had served out of units lower echelons where the commanding officer either mistakenly or advisingly or in some manner did not use that particular man to the best advantage. It will be a tragedy if that recurs again. I hope not. Thank you.





DR. REYNOLDS:

I would like to raise the question if this group isn't dealing with two problems that are pretty well mixed up. On the one hand, it seems to me that we are talking about a technical and service activity and at the same time we are trying to talk about a scientific activity on a scientific level. It seems to me that this group might well consider recognition of the fact that the services must maintain in personnel and be ready to expand in certain a technical and service activity on a diagnostic level which must be of the best. It will of necessity require the services of people who have been trained in science but in application in the same way the physician is trained in science for the application of science in clinical medicine. Then on the other hand, we are trying to talk about a scientific group in which we want to develop the individual and give him an opportunity to grow and take some individual stature which seems more or less incompatible with military organization requirements. I am not sure that is so, I think that it is possible, but it would have to be worked out. I think this is pointed out by two comments by two of the speakers, one this morning and one yesterday. The one yesterday was by Colonel Benson, who pointed out that there is need for a wide variety of people in the Air Force for the purpose of engaging for a relatively long period of time, an indeterminate period of time, in areas of research where people can work in problems of interest to the Air Force problems of impacts, accelerations, high altitudes, frost-bites, and such things. The idea of the thing seems to me to offer possibilities for development on a scientific level that uses physiologists, biochemists, psychologists, etc. Then this morning the first speaker, and I quote, mentioned that we would farm out research projects. In my opinion that is the center point around which this scientific argument really revolves, you will not attract scientists if you expect them to work for a limited option--you must enable them to develop in attendance, resourcefulness, be able to





satisfy a curiosity and not harm them. And I would point out that research may involve apparently fruitless efforts--ones that are not measurable in papers published, in the course of a year or two as we all know. But at the same time they may have far-reaching significance in the development of that individual and in this connection. It seems to me that there must be a set-up on this scientific level, some guarantee that a man will not be stopped from top-side in his efforts without due consideration to the real research capacity and experience potential of that individual.

DR. LAWFORD:

I would like to comment briefly on the reserve situation as several of us have found it within the last month or so. In the Military District of Washington all of us who are reserve officers have been receiving enthusiastic letters relative to various opportunities in the reserves. Having a nucleus of a medical laboratory on our campus, we set out to try to organize one. We have one Lieutenant Colonel; three Majors; bacteriologists; one with specialty in mycology; we have a virologist; two or three entomologists; several biochemists; several nutrition officers; in other words, we have the nucleus for a complete general laboratory and we started out enthusiastically to try to organize one working through the Military District of Washington.

We were even going to the extent of sounding up a possible enlisted group, so that if an emergency arose we would have a laboratory to say to the Army--here we are, we will go. Already organized. We found out when the J/O came that there was one major bacteriologist allowed, the rest were captains and lieutenants, and there were several other problems. We found one medical officer in the composite unit and there are some six hundred officers in that unit who were at least interested slightly in a laboratory of that nature. Several of us came here to the Pentagon two or three weeks ago on several other problems and raised the



situation of this reserve organization. Could we go ahead and organize a medical laboratory without all of the medical officers that were supposedly assigned according to the F/O? What would be the situation on it and so on?

Well, first of all in two different offices we were shown lists of places that the Surgeon General's Office had planned to have laboratory units. The Washington area was not one of them. Both of us went away with the feeling that no one gave us any encouragement to go ahead and organize this. Washington was not on the list--very organized. Secondly, even if some of the questions of the medical officers, the reaction was "Well, medical men are busy, you can't expect them to attend to reserve meetings. They have things to attend to, they can't come to these things."

Now our groups had been taking two nights out a month to go to reserve meetings. In the case of three of us, it was the night before last lectures that were our most intensive lectures, and meant considerable sacrifice. We were going to try to build up something and that was the response we received from the Surgeon General's Office. I think I can say that as a result, after our report that in the group, our attendance by Medical Service Corps officers has been negligible. I saw in the back of this a War Department Circular that gives a little hope. It says that with the development of the program as outlined in this Circular I hope interest can be revised. I am hoping so.

I have here a letter from a medical aviation physiologist who ends up in a situation of the major-11 was asked to join the Officer's Reserve Corps. This I refused to do for two reasons. First, despite 37 months service with PhD degree and excellent rating, I have received a reserve commission as only a First Lieutenant. Second, there is no program with an aviation physiologist in the Reserve Corps. It is my belief that instead of receiving military courtesy and being shortwinded like a member of the Officer's Reserve Corps, I can best prepare myself for any future emergency by devoting my time to my specialty. It





a definite program for physiologists was evolved which would involve occasional refresher courses and a supply of literature to keep one abreast with Air Corps problems in physiology, I will join it immediately." I believe that in this unit's program, allowances should be made for demand which would be in line with allowances made for other professions. Along the same line, something that is very real to reserve officers is the Reserve Officers' pay bill.

We know that pay has been approved by Congress and signed by the President. The Military District of Washington is just now and advised any of us how this pay is to be deferrable. There are 16, and of course reserve in the Army and also a dozen, that it will be dependent upon membership in a T/O organization. Now if that be the case, where does the Medical Reserve Officer stand? If we cannot get a T/O organization, we are not eligible for the pay benefits, according to rumors, and how many of them are you going to get out to reserve program sessions?

That is the situation, some of us who were enthusiastically trying to develop a reserve unit, found within the last month. As I say there is hope as this still, it came out in a circular and was published I think within two days after we were here, and yet no one pointed out that this was being resolved.

#### DR. BIRKLAND:

I take it that you have three things in mind. One is the immediate and rather large demand by the various services. One is perhaps a very small replacement after you have filled your immediate quota and third is a rather large supply in case of emergency. It seems to me that there are several things involved here and I have had no personal contact with the Army and as I have no ideas as to how it's run but I talked to a number of my graduate students and asked them just what their interests had been. Some of them are on the market





now and of course the buyers are pretty thick. No one to recognize that this is really a seller's market and you are just one of the buyers. I think that those men who are now available think in terms of three or four dollars and possibly in this order.

Now is the surroundings in which they are going to work, and I think that comes first. They can get plenty of money any place they want to go. They are thinking in terms of their surroundings. Some freedom of choice with respect to problems, some recognition of personal efforts. Second, I would list this matter of security, and third starting salary. I list starting salary third because we have one man who has just gotten his degree with us who has waited for two years on a very small stipend and has a 17 cent offer made to him, which I understand is pretty good, but he gave it up or didn't take it because he said he wanted his degree. I have one student who has given up a very fine job at a biological house, probably he is in the order of \$5,000.00 now, to live on his \$3 allowance and \$900.00 a year stipend. In asking him why, he said well he wanted his degree. I have two others and that same category covers both of them. They are very degree-conscious right now and I don't think any program that you will set up which doesn't allow for the granting of a degree from a regular university is going to intrigue any of them. I don't know why they want their degrees, but I think there is a great and very profound fear of peace, and they feel that when the peace comes these people from Britain and other places will flood the market. They have some money and feel that if they have a doctor's degree they will be in a much better position. They are not thinking in terms of the immediate, they are thinking in terms of the long term, and I am wondering—this is a very naive suggestion I'll admit—whether some arrangement might not be made whereby the selected men could have a bachelor's degree right at the time without necessarily having to go through the regular tests, even be issued out in the



university, given nine months of academic work and probably three months on the tour of duty and at the end of two years give them their master's degree and then in two more years give them their doctor's degree, rather than trying to get them into the service corps as a commission trainee not putting them back to the university. I wonder whether we could get more men if you reversed something of that order. The matter of degree-consciousness is not thing I cannot understand, but I assure you it is a very real thing in the minds of the students.

CHAIRMAN:

Dr. Warren, did you want something finished?

DR. WARREN:

No, I did think though we were biting off a rather big order here. There are only about 5 more hours of the meeting and I think the problems of the reserves are (1) administrative problems beyond the sphere of this group, and (2) I've got to go over this problem of getting good people into the regular corps. If you've got a good professional group in the laboratory, as Dr. Eary said, they'll be clearing to come in and I think that you've got to want the present reserve right about at the present time to the corps itself. I think we are due for lunch at 11:25 so I imagine we had better have a few minutes discussion, and I'd like to mention the very brief comments bearing on some of the things. Quite a little has been said about security, and I think it is well said. Competence of accomplishment provides security, and also something has been said about the opportunities for higher rank and pay in the administrative position. That's not peculiar to the armed services. That's part of the basis of American life, however unfortunate you may consider it to be. We will now adjourn for lunch and reassemble here.





CHAIRMAN:

Perhaps we can begin now with more instructive suggestions and attempt a new enterprise and get about some of the kicks we already laid out on the table this morning. I thought we might start by having Colonel Goriup, if he would, speak the baby a little bit.

COLONEL GORIUP:

I would just like to make a few brief remarks not so much in rebuttal to the remarks made this morning, but rather in the spirit of clarification. The question of promotions was brought up - fear that the only way you could attain high ranks would be by leaving the scientific field and going into the administrative field. I believe that most of you here today are experienced more in wartime rapid temporary promotions rather than in the permanent promotion scheme in which we are currently participating. The Medical Service Corps in their bill had a separate promotion list - separate and distinct from the Medical Corps, Veterinary Corps, Dental Corps, and the rest of the Corps of the Medical Department of the Army. It is true that two-percent limitation situation was brought up. We in the Corps don't like it any better than you do, and during a recent conference with General Armstrong he has given us permission to start enabling legislation for the next session of Congress - 81st Congress - to remove the language from PL 430 which set a limit of two-percent Colonels in the Medical Service Corps.

My very able assistant, Major Edwards, is a very able lawyer, well trained, knows his way around, and that is going to be one of his first jobs - to draw up enabling legislation and walk it through the Department of the Army in time for submission to the 81st Congress.

Coming back to the promotion lists of the Medical Service Corps, with the exception of the two-percent limitation, we have the very same spread of percentages





of Lieutenant Leidy's through became Lieutenant as soon as the rest of the Army. Yesterday, Colonel Yielding briefly outlined his concepts of career monitoring of the Medical Service Corps. He not only broke the Corps down into four basic sections, but he further broke down the Allied Science Section into further sections, around which he is going to build his career ladders. It is the full intention of The Surgeon General that in the utilization of these people they will conform as closely as is possible to the career pattern set up for those various sections within the Allied Science Section. What I'm trying to say is that when a man's record goes up to the selection board for a promotion, he won't necessarily have to be promoted on his administrative prowess or attainments. If he is a serologist and is following Colonel Yielding's ladder and career pattern in serology, he will have attained certain proficiencies in serology and he will be promoted on the work he did in serology or entomology or whatever it is. So, in fact, that man is not competing with a man in another section within the Medical Service Corps. If we get a man at the baccalaureate level, and he is initially commissioned as a Second Lieutenant, within three years he'll either be out of the Army or he'll be a First Lieutenant--that is automatic. From then on, in accordance with the new Promotion Bill commonly known as the Dolphus Act in honor of General Dolphus, its author, there has been an entirely new system of promotion throughout the entire Army. Prior to that Act, the Medical Department, as well as was on a non-promotion list as well as the Judge Advocate General's Department and the Chaplains, the rest of the Army was on a promotion list. The difference between these two is that the officers in the Medical Department receive automatic promotions after a certain number of years of duty, irrespective of vacancies, whereas those people in the line had to wait for suitable vacancy before they could be promoted. That caused some terrific stagnation among certain ranks - I believe General Eisenhower served in the grade of Captain for



some 14 years - just through that system. In the new promotion bill, there is one now not automatic, the Medical Department lost their non-promotable list privileges and all the officers are on a parity with the rest of the Army, in that promotions beyond the grade of First Lieutenant are by selection. The one nice feature that we have in the Medical Department is that we have a Medical Department selection board composed exclusively of Medical Department officers - the line has nothing to do with our promotions. Right now, the Medical Service Corps does not have representation on that board but only because we do not have sufficient senior officers at this time to sit on that board. We are a young Corps. We have only, by virtue of age and service, seven permanent Lieutenant Colonels, and as they are promoted we shall have representation of this sort. So I believe that no matter where the man serves - in what area - he will get his promotions.

Now there is another fact to the promotion scheme, and that is the one you are most familiar with, and the one that we get the most gripes from. That is the temporary promotion scheme. It is true that in many cases during the last war temporary promotions were not distributed as well as they could have been. During peacetime it is not intended that temporary promotions will be used as much as they were during the war. We are currently reviewing some 480 T/O's and distribution lists, general instruments which have to do with allocating the grades. In all cases, Medical Service Corps grades are going up and they will go up further as time goes on. I think that is all I want to say on promotions.

Now another question came up on MOS's. It's an over-all concept in the Army, not only in the Medical Department but the entire Army, that the best utilization of people is within their MOS. There again that is being handled, I believe, in two different ways. When a man is transferred from Point A to Point B, there is reflected in his orders a parenthetical letter, I believe it's ASD, I'm not too sure, but anyway it's reflected. One letter means that he may be assigned to





a position outside of his primary MOS for a period of one year. The other letter indicates to the new commanding officer that that man cannot serve out of his MOS for five minutes, he must be assigned to another analysis job in his field. It is our intention in the Surgeon General's Office that when people are transferred from one point to another they are generally alerted 6 to 8 months in advance as is done in Colonel Fielding's overall plan for career. The new Commanding Officer is alerted that this man is coming, another man is leaving, and I can't see any danger of the man being assigned out of his MOS under that system as soon as it gets under control action. The question of a hundred dollars a month pay for a medical and dental officer in the public health service, Army and Navy, came up. I don't care to go into the pros and cons; I'm working on that at this time, but I do want to inform the group that the bill that authorized a hundred dollars pay for these people was purely a procurement instrument at that time. The law is now about a year old, it's only intended to be operative for five years, and at the completion of five years it dies a natural death. Of course, those people who participate in it now will participate in it for the rest of their career. Those people that come day after the bill becomes inoperative will not participate in the additional hundred dollars. I just wanted to give you that for your information.

As far as work on the Reserve Corps is concerned, we have nothing to offer but apology and maybe a little self criticism for an alibi. The Surgeon General has just recently assigned to this office a very able medical corps officer, an able administrator who has been out in civil life for several years now and has come to reserve groups. He hasn't begun to scratch the surface but I expect that as soon as he gets in action that people in the field will be hearing more about the reserves than they have.





We have a tremendous objective now for the recall of three hundred Medical Service Corps officers of the administrative type and it is our hope that we can pump as many as two hundred of these officers into the military district or sub-district if for no other reason than for the first six months they give us an up-to-date roster. We don't even know where our Reserve officers are, let alone what they are doing. Apparently a step has been taken to correct that situation. I believe Dr. Laffer or someone brought up the possibility of getting officers at the baccalaureate level at the university and bringing them into the service, possibly commissioning them and giving them further training. That is certainly subordination and I for one like the idea. As a matter of fact, it has been a plan in our eye in our office for quite sometime. We fully intend, in fact we have some ground work laid for it, we have attempted to find out just exactly what the cost would be up to and including the travel time that would be necessary down to the last penny so that in the event we get the clearance we will have adequate information to defend it. That was all I had in my notes. If there are any pertinent questions that I could answer, I'll be happy to try and if not I will get the answer for you.

CHAIRMAN:

Does anyone have any questions that they would like to ask?

COLONEL GORTON:

Oh yes, there is one other point that was brought up that a specialist, that is American board men should be analogous to PhD or societies, diplomat societies, or some analogous term. That bill has not been passed and I believe that it has had a natural death in committee, the additional 25 percent pay was a medical



office becomes a board man. As I understand it, and I think my information is correct, the medical corps themselves killed that bill.

CHAIRMAN:

We will open up for general discussion again. Dr. Fenn, we haven't heard from you this morning.

DR. FINN:

I want to say something as representative of the biological societies. Dr. Farr and I are representatives here for our organization. As representatives of many biological societies I think we induced the job. The invitation was extended to all the biological societies that were members of the Division of Biology and Agriculture of the National Research Council. As was formerly organized only a few months ago under the governor of five societies as members, the purpose of this organization is to have someone in the organization who can speak for all the biologists and for their interest just as the Institute of Physics speaks for the physical scientist. The desire for some unifying agency among the biologists is one of a very long standing in this country. In the fall of the union of American Biological Societies, and neither of these amount to very much.

Unfortunately now that the organization has started with the backing of the Division of Biology and Agriculture of the National Research Council, the Executive Secretary of that division will be half-time executive-secretary on the Institute of Biological Scientists so the two will work together very closely. This Institute of Biological Scientists Society has not been the product of a war gripe or anything of that sort. It was simply the desire to a biologist to have one agency which can speak for all of them and can put a little careful constructive thought into the organization of biological business in this country. In the end the biol-





ologist can contribute as much as possible to the welfare of the nation and the Armed Services for their military needs. It is not a professional trade union but pooling of interest so that this organization can study this problem together. Now I have been handed, as a representative of this organization, a report which was originally prepared at the request of the Division of Biology and Agriculture, a report prepared by that division at the request of Dr. D. M. DeLo, Chief of Scientific Manpower Section, R&DD, the General Staff, U. S. Army, also working with the National Security Consultant Board. This will later appear as I understand it as part of his report.

This was the result of a questionnaire which was sent out to 25,000 members of biological societies and the completed returns were received from some 10,000 of them. These results were tabulated by the War Department and the report was written, as I understand it, around those tables by the committee of the Division of Biology and Agriculture consisting of Dr. H. S. Mc Associates Professor of Division of Medical Sciences; Leroy Dorris, Executive Secretary of the Nutrition Board and Nelson T. Spitt, Asst. Professor of Biology at Johns Hopkins University. The meetings of the committee were also attended by Dr. Lee and Colonel Goriup. Both are members of this conference. Perhaps they would have something to add to these remarks that I am making.

Much of this report is water under the dam, in that the tables show the locations of these 10,000 biologists who replied and so that during peace time less than one percent of them are in the military services, but during the war twenty-four percent of them went into the military services. In the younger group the percentage was presumably much higher and in the older group would be considerably smaller. There is no break-down as to age. The report asks whether there are places for biological scientists in the military services and mentions that there are





places and we can agree with that.

Table 4 reveals that of the 2515 individuals who answered the questionnaire and who are in the military service only 32 percent were placed in such positions where their specialized training was used, 50 percent or more of the length of time they were in the military service. The best utilized of this group of scientists were those possessing the PhD degree but even in this group only slightly more than one-half were employed at 50 percent utilization level. What that utilization level is I leave to the discretion of the War Department in making out the tables.

So the conclusion is that the majority of the biological scientists were not properly utilized during the war, by virtue of what I admitted in this conference, so there isn't any particular problem in stressing what is wrong, but the question is, what can be done about the future. This report proposes in effect that some agency be asked to make a survey of the biological manpower. What is available in the academic and military industrial institutions? Then make a survey of the needs of these different groups in time of emergency such as war, and then to budget the supply according to the best interests of the nation; in other words, this would be telling the military services, I suppose, what fraction of that manpower they could properly have and then they would have to make the best use of that amount that is due. In summary, it may be stated that the biological scientist is the key figure in certain phases of any offensive or defensive measure in a national emergency. In view of the limited numbers of such personnel it becomes imperative that they all be utilized to their maximum capacity. These determinations can only be made by an agency representing all of the sciences involved and by an agency dealing with the entire problem on a nation-wide basis, taking into account the available supply of such personnel through the war and the effectiveness of these individuals relative to the various situations in which they will find themselves. This is the proposal of this report, it is not



an official statement of the Institute of Biological Scientists. It does suggest that this Institute, as the Division of Biological & Research Council of the National Research Council might be asked to cooperate in making a survey of this sort. I have often said that I heard about the role of research and have said that this was stressed too much. I'd like to say before I sit down, just a word about that research career as I see it in the military establishments. I have no experience there myself except that I did achieve the rank of Second Lieutenant, as a nutrition officer in the First World War and I say that my services were very much over-estimated. I don't think I under-rate it at all. I had only a master's degree but I was well treated. It may be different now.

Now as to research career, I would say that research is a peace-time luxury. It is not so much a war-time measure and most of the research ought to be done in peace time. We should build up a big reserve of scientific manpower in peace time and keep them busy in research work, whether mostly in academic institutions and to small extent in military institutions and then in time of war, one must give up the luxury of research and accept service positions for routine jobs or other things which are not quite to the liking altogether of research people. I think one of the ways to do this is the way in which the committee on aviation medicine of which I know something is operating in that field, a field of interest to physiologists on account of the aviation medicine program here.

This committee is holding meetings, one is in the Army Medical Laboratory at Wright Field, one in Randolph Field Laboratory. This is connected with the National Research Council and presumably includes men who have had experience in these particular problems. It keeps them acquainted with the immediate problems in the services. It keeps them thinking at a high level on the types of





research problems which should be first in preparation for another war, trying to initiate different kinds of enterprises, so that if a war broke out that we'll be the signal for everybody to rush up with research problems but do the research problem before the war breaks and have it all ready and then rush away from research and go into the service. But for keeping some of the more experienced hands, older men perhaps thinking about this and then also holding meetings at which men who are just out of the service, who have been in the aviation medicine program in the Army or the Navy are invited to come and participate in conferences, take their suggestions about making research programs and keep them interested, build up a reserve. It isn't an official reserve, it's an unofficial reserve of scientific talent which can be training younger men as they come along and so keeping men engaged in scientific institutions, so that they could bring their services to the government when they are needed.





Dr. FLEMING: For a representative of General Schooley's part of the public health service here, I would like to make it clear that I am speaking only as an individual in this discussion, particularly in what Dr. Fenn just beautifully brought out. I feel that at three times of the force that illness is possible because I served five years in the Army and in The Surgeon General's Office the last two of them, so I am sympathetic with the officers, the scientists having helped prepare this report that Dr. Fenn just presented. As to the constructive phase of the discussion, I might say that it may clarify the thinking of it, if we realize, that I'm sure that many of you do realize that there are three pronounced levels which are the Army's difficulty now. The lowest being on the technical level, the matter which must involve the type of technical training which was carried on during the war. At the next higher level and intermediate level which Dr. Hall explained to you where need of men for laboratories resulted of men in laboratories. There the probable motivation which has been mentioned this morning, I think, will convince by such men as Dr. Bates. The third level of procurement is, I think, the most important one. That is the top flight level where we are looking for research personnel on a high level. Now there is probably a motivation as has been discussed this morning to make it attractive to the best mind, as brought out in many sections of the government, universities and industries. That Dr. Fenn has said as the best chance is to get the mind worker for you through the Army or perhaps better, to have the Army to bring the problem to universities and find out the problem.

Peace time. In that way you can avoid the great difficulties of the present situation and the problem of R&D numbers, while the matter, I have from my experience in avoid that on the lower levels certainly, but on the top levels than any form of departmentalization of scientists be thrown out of the window. I have to say more about



Carnegie Institute been associated with physicists and from their point of view I can see that their work would have been absolutely impossible in the development of the atomic bomb if they had been limited by

serial numbers, or ID's or other types of registration. It that my (ideal) need to let your individualism function freely and let the mind of the scientist go wherever it will and then, as I have been told, by some

need a mechanism, a device to translate the scientist's recommendations into

that is one of the points which must be recognized that to get from the recommendations to the actual operation is a very difficult thing. The gap there must be bridged

this group There is one other point I would like to suggest. That is the great necessity for having an advisory board which has been suggested which may continuously be in existence to bring it to the attention of the top level Armed Services Personnel the scientific problems which are important to the future of today. After all, from that level the object is to render the thinking of any opposing General Staff obsolete and then you will need, of course, to recognize this forward thinking of all scientific minds since there are so few today that they should be encourage.

DR. LEE : I too would like to be and add my personal

I think that

Public Law 387

felt this was the most satisfactory way of handling the organization separate scientific corps within the Medical Department. For example, I wondered if there were any pertinent research brought up against a society, that is looking for that sort of thing. Junior societies of various societies to study the data and come to some sort of agreement.

DR. FLAHER: Now, I'm not familiar with any procedure. I should like to express, however, in support of the suggestion which I believe Dr. King first brought out





and the JSC people be treated with regard to their promotions, their emoluments, their acts, on exactly the same level as the medical men.

to enter the Army and secure the type of confidence that is so essential to them. Now among the difficulties we have one which is impossible per se, a very real one, and that is the opportunity to do research. In no matter what walk of life a scientist is, research is a luxury, as Dr. Ferry puts it, which cannot be paid for in some way or other. In the discussion there has been a complete amount of separation of the research and the routine, but as far as the financing of routine laboratories is concerned, every provision should be made for permission of the lab director to carry out research work if it is not of direct utility to the Armed Forces. We find in civil institutions such as medical centers, that it is impossible to obtain adequate supervision unless the supervisor gives at least half his time, apart from his work of supervision, to devote to the prosecution of scientific problems. Now these are generalities, but I would like to add much more voice to what has already been said.

DR. FERRY: I have no particular comment. I am very much in accord with the views expressed by Dr. King this morning and we all realize that it is the objective to establish a research organization which should help to make the job attractive and a little bit more attractive than other opportunities for the scientists, and if you are going to build up this organization, you just have to have things that are just a bit more attractive than they are outside, and the way they can be made more attractive has been thoroughly discussed.

DR. CUSHING: I may just add a word. I don't seem to be representing anyone but Henry C. Cushing and John D. Huble - I'm not representing my organization - but to give you a few personal experiences and this may be in defense of the Army. I believe they have had quite a bit of talking over the weeks this morning, but the Army is concerned being certain of you and you and myself, and many of you were responsible for all the efforts which took place during the last war. Many of you





who are civilians now were responsible for the misfits, because I worked under a civilian who was a medical officer during the war. He had complete authority to get the men under him where he wished, and if he made any misplacements, he was a civilian like yourself before he entered the Army, and if you get in the Army during another war, you may make some mistakes yourself. So don't accuse the Army too much of being responsible for all the misfits of round pegs in square holes. The Army has made a long way in the last 25 years in trying to get its personnel in the proper slots. In 1935 I went into the Regular Army and served three years in it as a second lieutenant. In those days, a second lieutenant did all the hard work, so to speak. If he displayed any initiative whatsoever, his head was promptly banged off, and the other thing was that so long as you didn't kick over the traces too far all you had to do was sit back and in about three years you would get a pay promotion and in about five years, maybe you'd go into the second pay period, and it didn't make any difference whether you showed any initiative or not. We figured out that maybe as a second lieutenant it would be 25 years before you got to be a major and so in all, it was pretty discouraging for persons who were trying to get ahead in the Army. But the picture isn't so black now and from what Col. Goring has just said, I think that a career in the Army is quite equal to a career in civilian life. One thing that hasn't been brought up so far from my experience in Civil Service and in the Army, there has been no provision made as I see it -- it may be there in your plans, Col. Goring-- to weed out the individual who does not hold back the young men who show ability, initiative, and imagination in research work simply because there is a number of them who say, "Well, Joe is a good fellow and he's doing a fair job and we won't do anything to hurt Joe's feelings. We'll just keep him on." Now that's one thing we need to experience in the old Regular Army of 25 years ago. As long as the man did his job fairly well but was not sustainably profitable, he sat there and held the place and prevented a younger man who was willing to go



ahead and could accomplish something from occupying or getting along in the Army today, and I would like to see some thing put in the Army so that it will be more of a need-out of the institution of the man who is a professional. I think you-

MINOR EDITOR: I was scheduled on the program this morning to be the first speaker and I decided to cancel it because I thought time would be pressing. As I listened to these remarks I think I made a mistake because I was going to cover some of the points that I want to be covering now. To answer your specific question, Public Law 101, 100th Congress, which I spoke of before, sets up the new promotion system and is definitely patterned after the new out system. The Army for years has had a Class 3 and a Class 4 system, and I understand that in 10 years ago actually Class 3 had two officers. Under this new system of promotion, as the man goes through his years of duty, his name will periodically come before a selection board. If he is passed over twice, he's out. There's a savings clause in it. If he has 15 years actual service, he'll be kept on for two more years and then he'll be retired at 100% base pay. If he has less than 15 years service, he will have 75% retirement pay, he'll be dismissed from the Army, but his retirement pay amount equals the sum total of base pay of the highest rank he held at that time. That is designed to help give the man an opportunity of going out in civil life and getting established again. The promotion list for all the corps in the Army are promulgated on a "selection out" system. Fourteen percent of the Corps may be Lt. Colonels, 10% may be Majors. The percentage goes up as the rank goes down which obviously is designed to sort out the officers out. Now there's another savings clause in that in the case of the 100 who were authorized 100% Lt. Colonel, (as was the rest of the Army), who based on their 1,000 authorization, which is roughly 140, say 100, Lt. Colonel were authorized. If when we attain this strength of 100 Lt. Colonels, and 25 very able Majors come along and are otherwise fully qualified for promotion, they may be promoted to Lt. Colonel. That's to provide





dismissing otherwise full well qualified officers, but we do expect that by 1934, Public Law 381 (80th Congress) will be fully operative and by that time we will be selecting our own senior officers and that's what we should do. We have your policy of carrying over men. It's not intended to do that. I believe that answers your question.

Now if I may have just one more remark, I would like to give you a few observations of our intentions of organization of the Corps. That is, it's my job to make suitable recommendations to The Surgeon General to implement Public Law 381 through directives, Army Regulations, etc. Several of you good people were gone out of your way to tell me, to assure me, that the remarks that you made this morning were not personal. So please rest assured that I consider it that way. That is why you were asked to come here. We want you to air your views and suggestions. You say I do not consider it personal. As a matter of fact, the outcome or success of this conference will be that no matter where I meet you, I can shake hands with you and truly call you friend. So don't pull your punches. Whatever you have to say, tell me. We have only been in business for something over six months. It's a business venture. We have very little experience data or historical data as illustration with regard to some of the people who are now transitioning into the Regular Army. The bill says that the AGC must have a chief of Corps, and I was asked to take the job, took it, and we are trying to do something with it. First of all the bill specifically states that there shall be four sections. There shall be four assistant chiefs of the Corps who shall be the chiefs of sections. I think that was a very wise move. To date we have only designated one chief of section, which is the Allied Command Section and that is Major Dunn. We feel that within the Corps for ease of operation that there will be pulling up, pulling down, vertical control within this group. That we want what we say is outlined by Major Dunn's being here. He's chairman of this meeting. It's not my meeting,





It's his writing. And that's the way it should be. We expect the people in the Allied Sciences Section to write to him. In all cases, the assistant chiefs may not necessarily be in my office at this time. The adjutant says that we will know the chiefs is right now. Maybe sometime in the future we will all be grouped together so we can coordinate and get this thing going. But we do have an Advisory Council made up of the chiefs of the various divisions of The Surgeon General's Office. We need and we try to stretch those things out. It may be necessary, I don't know, but when I first took this job over I was most apprehensive about the too many vertical statements system. I think that the thing would fall apart if each of the sections went its own merry way and had no one to sort of lead and run it. I should say more by last the business manager of the Corps, so that the things that are necessary for the Corps as a whole are done and he lead very closely on the subject in the various fields. It's very apparent that we who can would help this Corps as writer that field he came from, if assigned to the same position, he will all understand; it's impossible for a man to be an expert in all these fields. So we have been getting by with on both civilian and military ground in certain fields and it may become necessary in the possible to designate these people not only by MOS but to reflect them parenthetically so that in official orders and in all other documents, it will be clearly and distinctly pointed out that the man is a member of the Medical Service Corps and if he is qualified for the Allied Sciences, maybe parenthetically, we will insert his proper MOS in future proper utilization. And that coupled with a distinct MOS and in connection with the plans that Col. Fielding and his staff will draw, I cannot imagine where this man is going to get lost. I don't think he is going to get more from an assignment past because he will have a distinct MOS and possibly a parenthetical designation that he belongs to a Section. He certainly cannot get lost as a



promotion standpoint because you cannot stop him. If he's fully qualified in that way, it is probable he will do work in that way. Now he goes right to the top through the years. So I don't believe that will hurt him any. There will be some probably that some well known administrative duties will have to be done by these people because at its best they maybe have a triple function. One as an officer, two as a scientist, and three as a potential administrator. After all, we in the Regular Army never won a war, never will win a war, we always need vast numbers of talent that is drawn in from civil life and these people are going to, in a great measure, be an administrative framework to administer in this very much and large groups of talent that we will have to call on in an area of emergency. I believe it is working along pretty well. We have gotten a lot of information at this sitting and please rest assured that no matter what you say I do not consider it personal. I consider it a help. Thank you.

DR. COTY: As an epidemiologist, I believe that Dr. Darling represented the feelings of the epidemiologists. That we have made great progress in the establishment of this Medical Service Corps. Things have to evolve slowly, and I believe are working in the right direction. I believe that was equally true that in civil life as in the Army, the average person has to assume administrative functions in order to move on to the pay level that he thinks he is entitled to. In passing, I think it's time to get out one thing as a lesson. I think that the Medical Service Corps organization could help immensely very substantially, possibly see, I am not trained, but particularly in the teaching of medical epidemiology. It would be a great thing I think, if there was a definite policy that men were allowed or encouraged to give occasional lectures in the area where they happen to be stationed. I have had some success in my classes and I think it's a great stimulus to students and it would help in getting the students interested in this service that you are





developing one. I think I would like to revert to something that Colonel said yesterday. He suggested publicity in the Journal. I'm connected with one journal, and I think that our Editorial Board would welcome material from the Medical Service Corps of the type that they want for publication in the Journal.

CHAIRMAN: Anyone else?

DR. DANNIN: was it your intention that the committee appointed last May be forward recommendations made today or was that to be a challenging committee?

CHAIRMAN: I think this group might be represented by a committee and I believe that the Preventive Medicine Service or whoever was responsible for bringing the group together would like to deal with a group which represents this conference. Want to make a motion bearing on that?

DR. DANNIN: I would like to recommend that a committee from this group be appointed for making the recommendations not in conflict with the committee appointed last May, a continuing committee which will be at the call of say the Preventive Medicine Service.

CHAIRMAN: Anyone second that?

DR. DANNIN: I second that.

CHAIRMAN: It's been moved and seconded that a committee be appointed as a continuing advisory committee to the -- who would it be officially be?

DR. DANNIN: I would like to suggest that rather than it be in the Preventive Medicine Division that it be to The Surgeon General.

CHAIRMAN: to The Surgeon General with reference to problems of the Medical Service Corps. Any discussion as to this action will be deferred. It's not quite clear as to the functions of the committee first appointed and this one.

CHAIRMAN: The functions of the committee first appointed were to assemble the





general consider personal opinions expressed at this meeting and being that they prepare a statement, which as I understand it, would be circulated to the members of the conference that gather here for comment or correction and after such comments or corrections are integrated into that statement, that would be supplied to the Medical Service Corps. That seems a desirable thing to do because we would hope that they would be through the work within the realm of a brief time, but experience tells us that it might be a considerable period of time before all the work and conversation that has gone on has been transcribed, and that is such a large mass of material it is highly desirable for the record. We need to have something more promptly that is boiled down.

Next few lines could not be understood.

Has anyone else anything they would like to volunteer?

Chairman: Dr (Pollock) of the Psychological Association. I would like to repeat two or three statements that have been made during the past several days by several of the speakers and see if they can be combined in a proposal which might meet with the approval of this group. We have had several between the research and one relatively high level of scientific material within the corps and some of the other activities within the corps. Each of the members of this meeting gave evidence of dissatisfaction with the inclusion of these within a single Corps. There has been a second cut in some of the work. Between

There has been a suggestion implicit in some of the statements and quite obviously in Dr. Lewis, the possibility of establishing a separate science Corps. That might be the effect of the election of such a Corps within the Medical Department, and some of the more high level of problems are to be found in other parts of the Army. I would like as a suggestion for possible consideration, the recommendation for the establishment of a Corps which would include the various groups



of the Army, both those whose primary interest is research and those whose primary activities are in service. Mobilization of such a group will present some problems because for many purposes they might best be a separate corps but for specific assignment they would have to be working with Medical, Quartermaster, Ordnance, Engineering, etc., so that for the detailed assignment, there would have to be integration with these other groups. As a trial balloon summarizing the attitudes and facts and statements this morning, I would like them to report that it is the consensus of this group that we believe the Army could get better service from its higher level science group by organizing them into a separate Science Corps, to include both those whose primary activities are research and those whose primary activities are service at the high professional level.

\_\_\_\_\_: Dr. Dammie, is it your intention that this committee be an advisory committee on the preventive medicine v.s. laboratory branch or a standing committee for recommendations of The Surgeon General on matters pertaining to the entire HSC? Dr. Dammie: On the latter, of course, on the entire HSC. Probably after a discussion of the Chairman meeting that the same committee appointed to report on this meeting might act in the capacity of an advisory committee might be approached by The Surgeon General on matters pertaining to the HSC.

\_\_\_\_\_: Really what you are interested in is that there be some coordinating mechanism rather than that it all be terminated with the single report?

(Next part not clear )

would be advisory along the lines of the Army Epidemiological Board as far as advice to The Surgeon General on matters pertaining to the Allied Biological Section. Is that clear? Would you consider the implication is that





...that the precise wording of that ... might be worked out by  
the committee that has already been appointed? Is there any further discussion?  
...: I'd like to raise a question in propriety of this group following  
such a condition. I think that comes under the Surgeon General

DR. HART I can make a comment on that. I think this group has been  
guided through your group recommendations ... appointed by Dr. Hise  
are now being circulated that a permanent committee should be set up to  
look and if the Surgeon General see fit not to accept that recommendation, that's  
within his prerogative. But if it is felt that the suggestion of Dr. Hise is  
a good thing, and it certainly is within his purview to make that recommendation.  
Just the same as he may make certain other recommendations, whether or not he is  
by the Surgeon General, so I will leave it to you with the freedom of recommending  
anything that you see fit ... if you feel that desirable.

(Too many talking to understand next part).

DR. DAMMIN: ... There are certain things we still want to  
see changed of the various phases in the establishment of the Medical Allied  
Science Section, and all of us here are here because we are interested in it. ...  
of us from the interest we've shown and the ... we've made ... this is ...  
certain things changed, would like to have a permanent advisory ...  
can continue to be made and ... have ... today represent ...  
a total ... that is, we're interested in seeing certain changes made and  
I'm sure that many of us are willing to act to continue to see improvements in  
the Medical Allied Science Section made.





...: Well, the substance of what you want as I see it here is that the  
... already appointed be instructed to include within the recommendations  
... the collection a recommendation that a reviewing committee, whatever  
the appropriate name for it is, you have suggested as appropriate something  
like the American Psychological Board, be established to review the Bureau  
... report to the Council of the AS of the NAC. Any dis-  
... the matter, as notified by the discussion, and I believe acceptable  
to Mr. Dammir now, is before you - are you ready for the question? Motion  
carried (was seconded by Dr. Reynolds).

I'm going to propose now, gentlemen, that since I have to leave at 2:00  
p.m., that we have about a ten minute recess. Dr. Farn will then be asked  
to take the chairmanship and say I suggest that perhaps since we have already  
voted on it, the rest of the meeting might give consideration to specific  
recommendations or recommendations that the whole group would agree upon at this  
time to be included in the report of the committee. Therefore, I declare a  
recess until 2:00 p.m.

DR. FARN, CHAIRMAN: Gentlemen, will we please come to order? I think before  
we continue the line of business suggested by Dr. Blake we want to give an-  
other opportunity for comment. There are three or four persons present and  
some had to leave without expressing themselves. I think Dr. King's committee  
would like to know what you think about these matters even if it's as easy  
than to say "That was or wasn't a good idea". So before we recognize Dr.  
Bentley, I ask again if there is further comment, and the members have  
agreed as to business again that you identify yourself for comment at the moment.

DR. FARN: I feel now I want all nothing particular to Bentley already been  
said here previously and today, because it seems to me that this group has been









with the JCRAT, JCRAT & JCR, it seems to me in view of professional  
all-aroundly in demand of specialized personnel, I've heard all those  
requests raised many times over by this same Medical Corps that we hope to  
annexate, and I think we should think as this conference closes, that the es-  
tablishment of a separate scientific corps would only be a small step in the  
direction of a tremendous number of organizational changes that will have to  
come in whenever we scientists find ourselves.

DR. JENSEN: I haven't said anything for about the same reason that Dr. (name)  
hasn't, plus the fact that I'm an engineer and so a little bit out of water,  
perhaps. I would like to say for myself that I feel that the establishment  
of a separate scientific corps is the solution to the problem and I would  
like to advance certain reasons to those that have been advanced here as far  
as possible as an engineer, my remark will probably report the findings of  
engineers, (middle ground with astrophysics and laboratory people and you  
know that that is the history of the Corps and I know they will stand in  
the same way, and that is sweeping that probably isn't strike very respon-  
sively in the liver of you scientific gentlemen because it is an emotional  
transition. The engineers have been fighting for a very long time to obtain  
professional recognition both in the Army and out of the Army. But I just  
want to stress the importance of recognizing that in coming to any decision  
as to whether or not there should be separate corps. A lot of you gentlemen  
have mentioned this factor of engineers, but I think that it can be empha-  
sized by the groups that are represented here today. It is in the mind  
of all of you in a certain extent, the desire to see that the particular  
group to which you belong reach the eminence and recognition that you feel  
it should reach, and I hope that when the final decision is made that  
thought will be brought into consideration. I don't feel particularly happy





when I meet some of my friends who are in the Sanitary Corps, and now in the RA because I am quite sure that I, with a lot of others, wonder why they stayed in, when they knew that they were going to be in a group that was subordinate to many other portions of the Medical Department. I get that feeling whenever there is a group of us together and one of these other shapes comes in. There are definite advantages financially, and many of us would be much better off in the Army. I don't think there is any question about that. Many of us are not in the Army for the reasons that have been advanced here today plus the fact that we had to be in an organization where as engineers we were put on a par with other scientifically trained people.

DR. MILLER: I think the part about the emotions involved is a very important one. I think behind many of the things that have been said in the last few days is the fact that medicine tends to degrade her auxiliary profession. Since I have an MD degree myself, I think I can state with a little more objectivity than those who do not have that degree, that this possibly has been the real fact about the history of the development of medicine. We are facing that problem which is really a social problem at the present time. I think, however, it is unfair of us to be very highly critical of the Army in dealing with these problems up to the present time. It has been quite clearly over the period of the past two or three decades and increasingly satisfactory utilization of scientific personnel by the armed forces and a constant improvement in the administrative organizations which make possible their utilization. It is the function of a group of consultants like this to try to hurry up social trends, but I think we should recognize that there is a strong trend in this direction already, and that many of the people in ordinary positions of responsibility in the

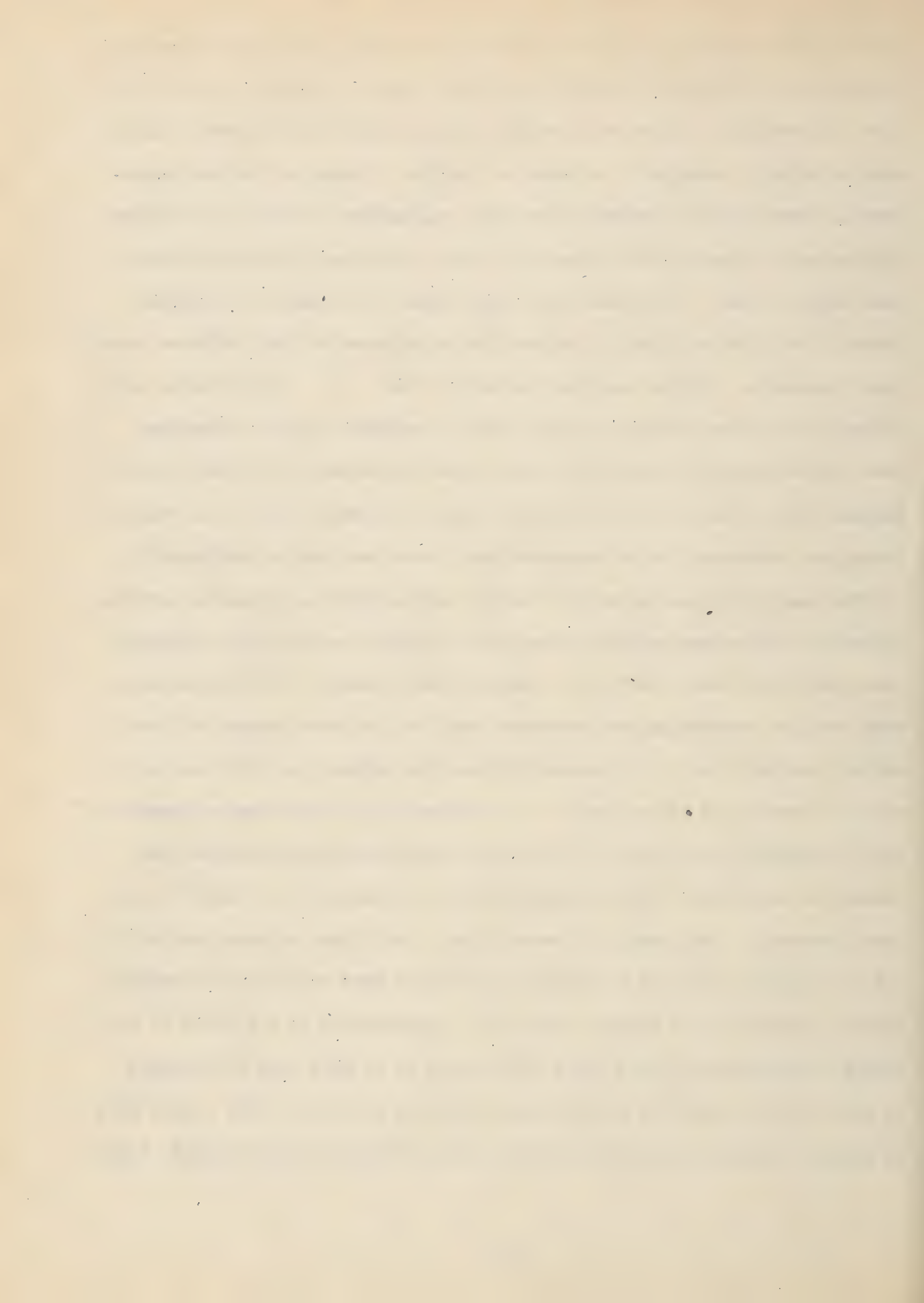


armed forces recognize the need of having a number of scientists. I wonder if it might be reasonable for this committee to consider recommending, in line with our other recommendations, that through the proper channels of the ND, who has called us together, that the considerations of this group be brought to the attention of Gen. Hawley's committee, which is delegated the responsibility of reorganizing the medical services in the governments particularly in the armed forces and to the Research and Development Board which in its committee on medical sciences and its other committees obviously had a very close concern with the matters which we have been discussing. I certainly favor personally any action that can be taken, to see to it that from the point of view of prestige and emoluments as well as opportunities for work, scientists who do not have medical degrees be given exactly the same considerations as those who do have medical degrees. I think we are dealing throughout all of this discussion with a difference in motivation and in view point between the average MD and the average PhD, and about which may be worth while bringing to the attention of the group. There are exceptions in both the MD and the PhD categories, of course, but the average MD is trained primarily to give services to an individual patient and his considerations is for that patient. The average PhD has, as his primary goal, the obtaining of generalized information and principles and laws which can then be used for the welfare of the individual. This difference in point of view results in a great deal of conflict in actual local situations, and the fact that the MD is administratively in charge of much research about which he is not directly interested in, frequently means the limitations of clinical factors are imposed upon the sections of it to a degree that is undesirable. I think we should also, in considering this dichotomy which Dr. Hafford mentioned between





services and research of the purer variety, recognize that we are faced with the problem of the basic research versus the applied research, and my suggestion to establish a separate scientific corps, which I would favor, will enable more basic research to be done in the Army. There is constant demand for the development of research ideas for application of fine line officers and medical officers alike, because they have their own problems and they need help in them. If we have the independence of a separate scientific corps, it will be possible for scientists to put more of their efforts toward basic research. I think one other aspect of this of the basic and the applied is the fact that has not been so explicit in our discussions here that a number of transient groups which are members of the MSM, Allied Science Div. are concerned with giving types of clinical service as well as doing pure research. It is important that those services be performed by bacteriologists, nutrition experts, clinical psychologists, by social workers, by various laboratory personnel who may be included in the Allied Sciences group that they work closely in a team and very likely it will be necessary when they are performing such services that they be under command or be of medical personnel which is reasonable since the primary goal of those services is service to the patient. On the other hand, those people themselves will be spending some part of their time on more basic research and other members of the Allied Science Section will be spending all of their time on basic research. That group, it seems to me, should have autonomy and should not necessarily be forced to submit all of their work to the final administrative supervision of medical personnel. Particularly in the field of research contracts and in the field of decision as to what part of research is worth doing within the Armed Forces, it would seem to me that a good deal of autonomy on the part of the Allied Science Division is particularly impor-





that since the sort of research which may seem important to the scientists may seem unrelated, too idealistic, or irrelevant to the medical man. If all of these research projects must, in the end, be subject to medical decision, I believe that a great deal of valuable work is likely not to get done.

MAJOR KUHN: Are there any other comments?

DR. SNAPPER: If I may strike clinically, since I'm supposed to be a clinical psychologist, one might start by looking for the complaint problem. What is the complaint problem that brought this group together? It seems to be that the Armed Forces want scientific work done by scientific men. At the present time they have position vacancies and are unable to induce a sufficient number of sufficiently well-trained people to take those position vacancies. One major immediate problem, then, is to get the work done that the Armed Forces want done. A great deal of the discussion here might possibly be included in the thought that in getting that work done it is necessary to preserve human values. Not that anyone is trying to make slave laborers or something of that sort out of scientists, but one might almost think that that was proposed from some of the thoughts expressed here, that is, that as scientists are made to do something under conditions that are not conducive to the maintenance of our self-respect. Now there are two aspects to that. One is good scientific work does not get done under conditions of that sort, and second, that if it becomes known, as it is known, that conditions are not ideal for maintaining the self-respect of the persons in the Allied Sciences, new people will not enter the field. Therefore, the two problems point, perhaps, toward one general kind of solution. And that is that both to get the work done that the forces want done, and also to maintain human values require improvements in the status of the persons in the Allied Sciences. These two values then, of maintaining the self-respect of



the biologists and the psychologists and so on, on the one hand, and getting the Army's work done, are not incompatible problems, but they are aspects of the same problem. This seems to underline the suggestion that a more autonomous organization that tables of rank allowances which would not discriminate against this group as compared to another equally professionally trained group, that pay scales as good as any equally well prepared professional group might obtain, that there are some of the symptoms of self-respect that will contribute to both of these problems.

MAJOR KUHN: Anyone else?

DR. JENNY: One other thought here--if a separate science corps could be established within the Medical group as may seem desirable, would it be possible that some of the non-medical biologists could hold higher positions within the Medical Corps so that you would get a more complete understanding of the biologist's point of view which might be helpful to you in the Army in maintaining the good morale of most of our people.

DR. BESSEY: We felt that there were larger

in which this could be arranged. And by larger those as  
have been explained by the various speakers today. We also want to do all  
we can to help the purpose's work and to aid any way we can the Army and those  
officers in it who understand this problem very well and help in our two days  
here. You may chance I want to add my voice to the other voices who spoke  
today, particularly by Dr. Shaffer this morning. There are one or two points  
I would like to comment on that has to do with this problem of organizing a  
separate corps. I think that someone, there may be those in the Army who  
want a hearing and we think it might be wise to organize a separate corps.  
Those that might be invol-  
ved in many types of sciences that that is going to be so scattered, we are





going to have so many classifications for it,

I think it is true that won't be the fix. I think what most of us are talking about is not that of being put into a Corps of Microbiologists, and the Corps of Bacteriologists, and a Corps of psychologists, we are talking about having a Corps or division

but I think we're talking about a Corps or its equivalent of scientists

chemists

will have no trouble at all in fitting

into an organization in which my superiors were

bacteriology, psychology, or entomology or one of the basic sciences in such a way that he would have a sympathetic understanding of my problem that he would know how my mind worked and the minds of others like it, how to approach research problems. The kind of conditions which you want set up in order to get creative work done. There is just no way, I believe, of getting creative work on research, however, either with or without providing the conditions that allow them to put their minds on that research. And whether it would be like a debate or not, whatever term you wish, that is the way they do it in my office. Now I think the idea of organizing a separate Corps or Division or whatever it might be is just impossible. You have to have thousands of applications to properly form. I think the main thing is that <sup>it</sup> should be headed by a top officer with professional training, experience, understanding and background to allow him to understand the kind of people that he has working in that Division. I think the only way you can get this, with rare exceptions, is someone who is a doctor and who has had experience beyond that perhaps, someone whose career, likes, thoughts, temperament and everything else in that direction,

has been used and we must allow the individual to express himself. It certainly is truly the very heart of this whole problem





of research as you all know. Now, if we are talking about a field other than research in terms of saying that you must not let individuals operate unbridled might sound like chaos as far as the organization is concerned. It would be like if you had a thousand people in your organization, that you had a thousand different ways of

Now I think that may be true, a good many of you would resent it. But I do not think this is true in general in the field of research. I think that research in that respect may be

I think you will have no trouble at all in getting the most

kind of teamwork. I think you will have no trouble as illustrated ----- by our industrial organizations,

by our academic institutions, by the way things were handled during the war

of getting teams of scientists whether they

are bacteriologists, or geologists, or what they are, they

this one requirement. They but you must put

them into organization by leadership, not by rules and regulations. As soon

as they see or hear rules and regulations, they are immediately rebelled

against. Now just one other point that I would like to bring up and it has

to do with why the Army wants scientists, they want them for research,

want them for service services, for teaching, and they want them for some-

bination. Now those are not all the things that we

all do every day. I think, as Dr. Parr put it, you have to use a certain

technique of getting these matters of service and teaching done. One of

our hardest problems in chemistry is to hire a man to take charge of routine

clinical laboratories. You just can't do it, even if they have in their

mind to do taking care of that clin-

ical laboratory, but you have to leave half this time, or some ratio about

that type, for his day research. That is why he is in the field he



... in that sense is probably interested in research. Now he is a research fellow, usually, he understands that his research is fruitless if he doesn't find out at the research. It is teaching others so that he will be followed by others who were trained in his own field. A lot of times it is the guide who didn't realize the important thing, but he doesn't like to be placed so that he I think it will be necessary for the Army, in order to reward their services properly, and certainly to reward it properly, to do it on the basis of what the man that duty and has some time free to do research. Now, another point about research, the Army is interested in research due to national defense. Now researchers would object to have to direct their research to that sort of thing. Now I think too the technique about that is different, but as I was talking just a few minutes ago in talking with Dr. Fair. For example, a few years ago I visited one of our industrial research organizations and copied how they got into their organizations. This was an organization dealing with making decisions. Now how did they get biologists into their organization and still reserve what the biologists felt was the have a reasonable future and that sort of thing, how we get them to have to work under a promise. Let's if people want to work on a problem. Let me give you an example. He sent a man in my laboratory and he is a biologist. We had a talk with him and told him some of our troubles, one of them was that we had a lot of trouble negotiating with our telephone poles. He said "I'm not interested in telephone, I'm just interested in fruit flies and the director of research said now is all right, "We're interested in telephone and we're interested in a lot of other things. Come along and work on fruit flies." He came along and worked on fruit flies. Within six months he was working on decisions, and he had just as much fun with telephone as he had with fruit flies. But





the point was, that after he once entered the

and learned about their problems, not in a personal way, by having lots of  
other men in the organization

He came into the organization

that per-

sonal way to do research, and the terrible problem is just an extension

of his devoted life as is from this. Now I think there is a task-

force about getting people in research to work on your problem is the

key. You don't want to say, "Come along now, you are going to help me

how far

and they rebel a-

gainst it. People like the technique in which you

that we have all been talking about, it won't mean that you will have to

destroy your organization

I think

CHAIRMAN: Is there any other discussion?

research people don't pay any attention to the criticism. I think they

will if you removed

Any discussion, Dr?

DR. JONES: I am very sorry for Col Corbin with all this

I'm also very much perplexed at all the problems

the Col is up against

I think we are losing

sight as we

out this morning that this

kind of procurement of men is not only scientists. They have to be scienti-

fically trained. Not all of us get into research even if we have the

inclination and the ability. I find that a good deal of my time at the

State Laboratory is taken up by routine administration, and much as I don't

like it, it has to be done. N

in research





. We have to have the personnel to run the labor-  
 atories and the various set ups that have been mentioned the Medical Allied  
 Section. I think we must not lose sight that we must have men who are trained  
 to do the routine, if you want to call it the dirty work, but it is cer-  
 tainly the necessary work of the laboratory. But the blood counts and pro-  
 tein counts and the various things we've had to do. It doesn't  
 necessarily do itself, and so we must have it done properly  
 and also you must take my laboratory in the military service and you must  
 make sure that the man who is in contact with the other  
 military personnel. He has to be able to talk their language, and one of  
 the things I found out a long time ago, that no matter what particular  
 branch of service the man's in, if he has not orientation in military forms  
 of courtesies, military manner and so forth, he is a damn poor officer and  
 he may be put in a corner and isolated, and we may do his job. But cer-  
 tainly as a human being, he doesn't. So I think one of the  
 things which we mustn't lose sight of is that you do have to have military  
 orientation  
 concentrated form so that he can have, so that he can talk the same lan-  
 guage and make it understood, and he is able to return a military salute in the proper manner, which  
 I feel sure of my medical could not do. So I think there is a  
 problem. And I say first, there is the procurement of  
 personnel properly trained in laboratory science, both in Medical Allied  
 Services Section, and the second to be able to obtain additional men who  
 are trained in research, so they can go and study the problems which are  
 a common part of this particular part. I am very much in favor, myself,  
 as I said this morning, I was much opposed to the more Medical Service  
 Corps, I think one of the speakers yesterday inadvertently spoke several



times and said Medical Science Section. If you  
medicine, I don't particularly care. I think a Science Corps would sound  
very good to me.

MR. TERRY: I would like very much to say a word about the sudden emphasis  
being put on procurement. I think there are enough reasons for that. In  
the first place, as did not, I believe, adequately brief these far-flung  
members of the Surgeon General's Office who spoke yesterday, on the pro-  
ceedings of the conference. Also, at the time the first letter announcing  
the meeting came out (I think a day or so later) the President made his  
speech, regarding the state of affairs in the world and I think many people  
were apt to jump to the conclusion that the Army was speeding up procure-  
ment objectives. In planning the meeting, while procurement definitely  
was one of the objectives, it was not the primary objective, I believe.  
If all the positions had been filled in the Medical and Sciences sec-  
tion, this meeting would still have been called, I believe, because it  
was recognized in conversations with scientists, that many felt that science  
and groups were not adequately concerned in planning the Medical Ser-  
vice Corps. So it was decided that now that the Sciences Section has  
been organized and is functioning, it would be a good time to call in a  
group of scientists to show them exactly how it is operating. Much of  
the discussion has also centered around the place of scientific or scien-  
tific corps in the Army in general, in the Medical Department, and so on.  
While we welcome opinions and suggestions along these lines, and on pro-  
curement, I do feel that perhaps they have been overemphasized.

MR. ROXBOROUGH: I'm reminded a little of the type of perennial fight that  
takes place over the college campus between the fraternity men and the  
barbarians. The fraternity men, of course, is no better football players





than the barbarians, but the barbarian is very seldom elected Captain of a well-regimented Infantry company, and I think there is a little resentment there, and a feeling that if we barbarians were to start our own Infantry, we might be a little better represented. And that may be in part, justifiably so, of this whole discussion. But I think before we consider the establishment of any new Corps, we should think primarily in the terms of the nature of the job to be done and see whether a new Corps would allow the Army to take better advantage of the things that the scientists have to contribute to the .

MR. OTTO: Mr. Chairman: I was thinking along those same lines

Major Kuhn. It seems to me that we've got to keep in mind that the Army is not interested in building up primarily a research institute, that isn't its objective for being. We have an emergency component as an extra line of defense in case of need, and that need of course has arisen, and may well rise again.

While the service prepared to be expanded in case of need, and that means, of course, resistance may well rise again. In order to get the maximum of personnel in there they will have to have the inducement of being there people in and as we trace the history of the development of the Army there was a time when the Medical men were brought in primarily for the purpose of treating injury on the battlefield. Secondly to take care of men in the camps. And gradually over the years the medical department has from critical medical department to the biggest medical and applied public health organization in the world. The clinical medicine is a minor portion of its overall activities. As it has



because a public health department rather than a clinical medical department, it has utilized out of proportion besides clinical medicine. And it is these other professions that are on the voluntary system that should be better utilized, but the question is how to utilize them. It seemed to me that we can't neglect the fact that <sup>there are</sup> other departments interested and besides the medical (perhaps) limited and defined but very real. In research and in our mission. I think that we ought to give thought to that and I would be a little sorry to see a research department specifically stating that a separate corps should be set up to do this kind of work that corps should be formed. Out of us here, and, of course the organization is not there as yet but we are in the Medical Department. But it will be a possibility of a scientific corps, does that in science -- biology, physiology, chemistry and what have you -- and in the medical department. If it is to be in the medical department, it seems to me it will have to be a component part of the overall medical picture, a separate corps under it, but it might well be that the physiologists and the biochemists, and it is a little hard sometimes to distinguish between a chemist and a biologist because their fields are definitely overlapped, right? Well, now considering where, in all this overall picture, we are -- whether it is entirely the medical services and Allied Medical Service, we can share it with in trying to induce the patho-scientists to come in, give them the opportunity for research so that they will be available to the medical services when needed. Is it entirely a problem of the Medical Department? Or isn't it? I don't know. When I raise a question like that, I think that it is probably very close that we have not been successful to the present time in attracting the type and





...into the corps that we would like to see in it. The question is how to do that with success. It seems to me that as far as the Medical Department is concerned, it is not only to a minor degree interested in clinical medicine, but primarily it is interested in public health and all that goes with that. It includes the epidemiology as well as the biological and so on as far as medicine, when we talk of scientists, only of the medical department?

Evidently someone said some-

thing.

DR. WILSON: One phase of Dr. Otis's question I would like to emphasize for the record. I am sure everyone has it in mind. It has been brought out that a doctor's ... mentioned first and that has been the results of several of the last few speakers. That is the great distinction between what would be acceptable for the Army in peacetime and what is necessary for the Army in wartime. For a good many of you, the objectives are the same, from other angles they are very different. Particularly when they are applied to the Army.

I think

of the recommendation,

thought should be given to this fact and I think it is a fact that in combat

we don't want war, we hope

that it doesn't come, and we hope that if it does come it is in a foreign theatre, not at home. But in combat theatres where we have armies of several millions there is a distinct need for scientific personnel not engaged in research, having possibly, to a certain extent, routine duties but very important duties. The scientist should be such in peacetime that the Army can be expected to take in such men in the numbers needed. Along with that I know from talk with a good many scientists that the scientists









won't make any difference in what position a man occupies in the field, because I would just like to emphasize that from this point on, the promotion depends upon the findings of the selection board.

Q. Now: This promotion depends upon the findings of the selection board, the promotion board, and they will predicate their actions strictly on his records. If his record is in a combination of scientific

administration and its good, he will be promoted. If it's strictly administration within a scientific field, and

it's good, he will be promoted. Shall we say, if it's in purely scientific endeavor, he'll be promoted. We have very much the same situation pertaining to the Medical Corps today. We have men doctors, who, early in their career are thrown into the administrative stream, maybe to a degree that sacrifices medicine for that. Other men early in their career

theoretically possible for them to come into the Army on Monday, and leave for a residency on Tuesday, and not come back to duty until he's got his certificate from the American Boards. It may be neurosurgery, it may be in any of the fields. He may stay in that his entire life, his entire career. Obviously his promotions have to be predicated on how good he is in that particular thing. I believe our present Surgeon General was in the field of surgery for almost his entire career. The prior Surgeon General, General Dick, wrote many a text book on orthopedic surgery, and most of his promotions were predicated strictly on professional work, so there'll be no discrimination whatsoever. As a matter of fact, just as a personal side, I believe, it is indicated that the curriculum in the various graduate schools, your embryonic scientists could well include a little



administration. I know that sometime ago I got numerous calls from our present chief of the Allied Science Section, Doctor Weber, and I think I explained to him about five or six times the implications of paragraph 17 b of Circular 5074, and he called me three or four times and said, now what was that again. While he's been down to my office for about a month assisting in connection of this meeting, I find a great improvement in that . He now not only

know paragraph 17 b, he knows all the circulars, so I think it is that we do expose our scientists to a little administration. He gets it directly or by circular or however he gets it, just as he gets it. Because it is of inestimable value. It's just part of the system. Now question number 1, I believe, Colonel Whynes would be more qualified to answer than I am as in the first three years of pure research.

MR. HARRIS: That was entirely in with the planning of the career of each individual, and I don't know whether

Major General. He is not going to sit back and tell each individual what his career will be, but the career will be worked out with the individual. Now in these circumstances, a man whose inclination are towards research can very well work in a research type of career. So in general, the answer to your question is yes. That will not apply to every man, because there's in the Allied Science Section. But here's a case, a hypothetical case. If you wanted a man, for instance, for aviation psychology to work on math, and you got him especially for that, could such a man, could you give him the assurance that he would be on that for three or four years, or a few years. I think that once he was in





in for that length of time, then this question of availability and adaptability would work automatically as Dr. Hessey pointed out.

DR. HESSEY: I think the general intent to that is yes, too. I think it is a matter of false economy for the Army to bring in another qualified individual or that type, and turn around

COL. WHITNEY: I think Dr. Hesse's question is a possibility that he might be referring to general officers who have no particular insignia of their service relationship. I believe that there is nothing to prevent a general officer from being chosen from any of the categories, providing he has the necessary qualifications.

DR. PARR: That's right. Scientist Corps. Corps can't be appointed a general officer.

COL. WHITNEY: Well, I think that was in your mind.

DR. HESSEY: Well, I simply went fairly well up the scale. That is, I don't know the Army at all. My only connection with the Army was being practically run off the post by a guard with a very business-like rifle when I was collecting bugs out there one time.

COL. COMPTON: Probably I can elaborate just a second. The promotion system, as it pertains, and this is the same thing incidentally, as would happen to a bacteriologist and chemical                      a psychologist in the Adjutant General's Department doesn't have a separate insignia. He's a part of that whole department. He's sworn in                      and he goes up there                      discriminatory. Get a man at a baccalaureate level inferior as the Medical Service Corps is concerned, and he comes in as a second lieutenant. Three years later he's promoted to a first lieutenant. Now that's the point at which a man with a PhD starts, because he is far above three years above the baccalaureate. We know of many cases



of the last military system that, say, as an average of this year, when  
years has been a ship officer. As a PWD comes in as a First Lieutenant.  
In either case, he comes in as a Second Lieutenant and three years later  
as a First, or he comes in as a PWD as do doctors and dentists. Four  
years later, he's promoted to Captain. Seven years later, he's promoted  
to Major. Seven years later, he's promoted to Lt. Col. and several years  
later, he's promoted to Full Colonel. You know the difference when he  
comes up to the selection board, he is just another member of the Corps  
being considered on the work on his records. If it's good,

they can't do anything else but promote him. Perspective of vacancies,  
there at that time he can't be promoted  
in excess of the vacancy authorized.

DR. \_\_\_\_\_: Well, that answers my question. In other words, the  
person coming into the Corps for anyone may  
say, "Someday I may be Surgeon General."

\_\_\_\_\_: Well, Not Surgeon General, but

DR. \_\_\_\_\_: Someday I may be an advisor to the Surgeon General.

COL. CORNUM: Some day you may be Chief of the Corps.

CHAIRMAN: Well, gentlemen, some of our group have already  
and I know that most of you have commitments. However, I would suggest  
that you hurry along. This is an important meeting, and the Corps pass-  
ing to business I would like to ask if there are other comments.

DR. LAWSON: Would like to stress this idea for a separate science corps.  
Much of our discussion has been normal revolving around the use of the  
biologist in the laboratory, but there are so many places in the army as  
in civilian life where biologists could be used that might not be defini-  
tely related to the medical department. I am thinking of the Quarter-  
master corps during the past war of use in determination of products, etc.





Quartermaster corps, but also, at the Quartermaster laboratory several excellent bacteriologists include preservation, include technologists and the like, but it will be a survey in which you could be assigned, then from there, due to various using agencies, of which the Health Department would be one. Secondly, I would like to ask if there is any way by which we could find out what happens to the items that we may suggest to the Surgeon General and that we do not have known to the recommendations of this group what apparently has happened to the recommendations of the group in which Dr. Hanna referred this morning where they went to the Surgeon General about a year and a half ago and he has heard nothing since. I have very well that we don't have, nor we cannot expect a whole hearted adoption of recommendations. You like to know occasionally that such things are under consideration and it may be doubly assuring if the giving to doubly assuring to Army and civilians both.

\_\_\_\_\_!

but I do want to assure this group and every other group that recommendations made are given serious consideration. Now if we are fit not to take action that has been recommended it is based on a very careful valuation of all factors bearing all problems and under those circumstances we may not take the action that has been recommended. But certainly we do not call a group of important people together and ask for help, advice, and suggestions with any intent other than giving every consideration to those recommendations. You must recognize also that we have to make the recommendations and like every other considerations and also that a recommendation made by this group may be applicable to reg-



Army that during a period of change such as we are in now may not be applicable. But I do want to stress the point that every consideration by everybody with a chance to be concerned with the problem and recommendations, all of them

Surgeon General then decides on the phases, he says things to be done. Will someone present with what we might call the business meeting, or at least the resolutions meeting of it. Dr. Wolfe, do you wish to

DR. WOLFE: Following the distraction of an out of place notion that I made some time ago, shall I make the motion again? "I would propose that it is the recommendation of this group that there be organized a scientific corps to include the scientists engaged in research and in professional applications of all the sciences used by the Army." Now I leave out of that notion any special statement of where, for administrative purposes, such a Corps should be. I don't know whether it should be in the medical department or outside. I don't believe that we, as a group, have known enough about all of the administrative problems to answer that question or to make specific recommendations on it.

CHAIRMAN: Dr. Arnold.

DR. ARNOLD: Mr. Chairman, as I understand the motion, it is that it be reported that consensus of this group that there be organized in the Army a scientific corps which will include scientists engaged in research, or in practical applications thereof. I believe it was stated before that this might be reserved but that, as I understood it, was the discretion





of the problem.

DR. HARRIS: I would like to ask Colonel Daring and Colonel Hargis what the Army's recording and how much additional red tape the creation of another Corps might cause. I am sure a tremendous amount of additional red tape caused by

personnel the United States, chemical ex-

periments, the

I would just like to

know what would be the official opinion of you people as to how much more complicated that would make the picture of having a separate corps of scientific personnel. My mind off hand tells me that it is going to cost

machinery considerably

COL. GORTON: I think it would be a reasonable task for undoubtedly what you are considering is a Corps that would be more or less on the level with the Medical Department, Quartermaster Corps, etc., etc. That goes a little further than just the establishment of the Corps and it has been, to a great extent, hard to visualize a Corps like that to have similar care. Someone similar to the engineer who, Chief of the Engineer Corps today in effect decides a lot of engineering projects to be developed. I would visualize a Corps such as you mention as having highly technical people with exceptional administrative ability to talk, who presumably the Surgeon General would come to him and would say "I need bacteriologists, zoologists, anthropologists, etc., etc., and he then would say "Why?" Then the Surgeon General would have to say, "Well, I'm doing a surgeon's job here of a certain type" and he might say "No, you can't, because that is being done somewhere else." I think this would entail terrific administrative work.



DR. JENNIE:

please any additions or recommendations that have been made here, but from the point of view of central administration within the Army,

would ask you to consider the amount of which despite the fact many of our scientific people have already had their basic and beyond basic training, before they come into the Army, there is nevertheless a large amount of training remaining to be done. And in one field, one separate group, such as this would have to be on the level of the other technical services can train a group of people to take care of the problems of the Engineer, and the Quartermaster and the Surgeon General, and the Chemical Team, Chemical Services, and so on all at the same time. It seems almost insurmountable from that point of view. Now I think we have to be practical about it also in effective terms of what the reaction of the Chief of Staff would be, for after all, he has the say of what the organization within the Army is going to be, and also we have to think in terms of what the other chiefs of technical services would have to say, Engineers, Chemical Service, and so on, beside the Surgeon General, and I doubt very seriously if from a practical point of view, we could receive support on this recommendation from any of those groups. Now I'm not saying for a minute that it should not be proposed, that it should not be recommended by this group. I certainly found out that some of these very practical problems, and some of the administrative and organizational concerns, etc., as Col. Goring said, almost insurmountable within the framework of the Army.

DR. JENNIE: In elaboration of what Col. Goring said before, when I spoke





about the recommendations made at a laboratory conference about a year ago. It apparently was, and still is, inappropriate to expect that recommendation regarding the reorganization and re-establishment of the Laboratories Division independently in the office. And I think that the suggestion that is being made now is going to meet with the same, because this issue of going to give us some advice about this issue is going to meet with confusion, and it'll be discussed with all the services which will be involved with the new Corps, and as Dr. Otto already pointed out, it's difficult to define exactly what this Corps will consist of. If it is to be an independent Corps, recommended to be an independent Corps at the level of the other technical services, actually by itself, it will not be sort of an operating or facility by itself, that is, as has been mentioned, the Ordnance Corps Chemists and Bacteriologists. The Chemical Warfare Corps Biologists of various types, Chemists, and perhaps it might help if we could agree on some limitation of the group which would be included in this new Corps. It's in my own mind that what occurs to me is in conflict with what has been said about a Science Corps within the Medical Department. That is, the Medical Department needs the services of the Allied Sciences, and I could think that a separate Corps could be established more easily within the Medical Department as a separate Corps, rather than at the level of the other technical services. I think it would be more readily accepted because there the services are well defined, that is, the bacteriologist is, a medical bacteriologist, in the Medical Department. The functions of each scientist in the Medical Department would be fairly well defined if we had a Science Corps at a higher level, we would include as has been recommended, all types of Physicists, Chemists, Bacteriologists, not nec-



essentially recommended to medical technology, and it would not seem to be in the best interests of the group and we will recommend a group as one which might be considered as a service Corps within the Medical Department. I don't want to make that recommendation, but just mention it as a consideration because guessing from what might be accepted by The Surgeon General or the General Staff, perhaps as the first step if we list this service, not service Corps, Science Corps, to science applied in medicine so that it would be in the Medical Department, it would to my mind have a better chance of being accepted.

DR. BRYAN: There's one other point that might be made. That is, there is a complete precedent for liaison between ourselves and other technical services. For instance, we have medical officers at the present time who are assigned to Chemical services. We have medical officers who are assigned to the Quartermaster and if necessary, we can arrange to have officers from other technical services assigned to us. It is not impossible within the framework of the Army to make such interchange, and so I think that along the lines Dr. Tamm has just spoken of, perhaps we should confine our thinking today to that side of the problem. I say again I don't want to see recommendations be removed, but I can foresee so many clerical difficulties that I think the thing as far as a staff study is concerned is to handle this group with a dire warning and I don't believe that their position here as a medical group to make that recommendation at this time.

CHAIRMAN: Any discussion or amendments?

DR. UTTO: Dr. Chairman, I second Dr. Tamm's motion. When I seconded it, I mentioned the very things that Col. Goring and Col. Rhayne bring up, and I seconded it primarily because of the added note that I have to





the fact that I had not at the time had any statement as to what this would call. And I thought that conventionally included the proviso that if in the Army Administration it was best to launch them in the Medical Department and to organize it primarily around those who are furnishing allied medical services, that would be appropriate under the resolution, but also to indicate primarily that a Science Corps should be set up. That was the object of the wording of the action which I seconded was that a Science Corps be set up. Where it would go would be a subject of further study and I think it is perfectly appropriate to say it belongs in the Medical Department as one of the Corps in the Medical Department. But at the same time I had thought it was best for this resolution not to precisely state so because again I thought there ought to be some basic principle laid down here with plenty of room for administrative prospectives. I don't think that I intended, I don't know what Dr. Wolfe intended, that we should necessarily ask the Chief of Staff to set up a Corps which is equivalent to the Ordnance Department or the Medical Department necessarily. Nor were we being conceivable under such

situations like my

case about.

DR. \_\_\_\_\_: But at the moment I did not have any

DR. OTTO: That was the sense that I had when I seconded the motion, I don't know whether your \_\_\_\_\_ or not.

DR. \_\_\_\_\_: You had the same regards.

DR. WOLFE: We can't tie this down at the recommendations and make it hardly specific. Are we trying to state something which would be in a sense of direction which we would like to move? Whether it is to be organized within the Medical Department or outside is the question for decision on the basis of very careful detailed consideration later.



say I am an additional note that since this is a meeting called by the Medical Department, and also that this will channel the Medical Department, it is probably the only solution that has put by dissolving the Corps in the Medical Department. I recognized that also.

CHAIRMAN: Maybe there ought to be more said about the motion.

I now believe that a separate corps of the Medical Department might be more . Any probation of a sep-

arate corps which would probably be the recommendation of someone such as the National Society of Scientists or someone higher level.

DR. \_\_\_\_\_: Would you like to really the motion is dissolving the "Medical" in front of everyone to include the scientists engaged in medical research or practical applications thereof, or just leave it as it is for discussion and vote?

DR. \_\_\_\_\_: Someone else can make that motion.

DR. \_\_\_\_\_: I would like to suggest that if the each scientist that the scope of the Allied Scientists does that come closer to what you are thinking?

DR. \_\_\_\_\_: The one person directly in the Medical Department, is that is what you said.

DR. \_\_\_\_\_: Mr. Chairman, I would like to support the earlier form of motion of Dr. Wolfe because while it is clear that we are called by the Surgeon General to make here, it seems to me also that it is entirely within our right to point out that this involves sometimes other armed services besides the Medical Department and the motion as originally put makes that point. I think the main difference to be noted is the problem which is increasingly concerning large masses of people,





the problem of the proper utilization of scientific personnel in the context of war. In the last war, in psychology, I know there was competition not only among the various armed forces, but also among the various arms and of the Army itself for psychologists. I am sure that was true in many other fields of science as well. If experience in general always suggest to individual men that there will be this competition for scientific personnel which will not result in the most satisfactory utilization of these scarce highly trained individuals. Now there are agencies for national science education in Research and Development Board of the armed forces which is one of the six primary divisions of the national military establishment and, as we have pointed out, our scientists, biological type, psychological type, other types in many of the branches of the army as well as the other armed forces. It would seem to me that it would be reasonable for us to make some sort of recommendation which would point out that it is desirable to have proper distribution and proper utilization of all of this scientific personnel. Whether including that in a single copy of the army alone or whether they are included in a single copy for all of the armed forces is a question I don't know. But every time that I come across in discussion with the Quartermaster Corps, the Medical Department, or whatever other department were interested, it would seem to be wise to call to the attention of the responsible party this fact that we have not properly used our scientific personnel or properly distributed them in the past.

Mr. \_\_\_\_\_: I would like to speak in support of what Mr. Tamm just said, and also in support of Mr. Tamm's motion. Nothing will solve our difficulties of administration involved. I think we have reached



a body of scientists to bring to the attention of the military authorities that there are these sentiments these very strong feelings on the part of scientists in general. I might add that in the meeting of the

this matter was discussed and some of those members of that small committee felt that a general scientific corps might be desired. On it would be, I think, desired if such a combination could be made by this group even though it was side or perhaps lost in administering the details. I would like to add this thought. Perhaps the word "corps" is a stumbling block in the minds of many of the officers here. I don't know if many of the scientists realize the feature of that word "corps". In fact, I wonder if Mr. Norris would be willing to perform change the word and eliminate the difficulty in the minds of some of the people here. In other words, I think this

is that some of us would like to see a scientific category division which would in some sense facilitate for the army the work of the scientists in general. Perhaps the word "corps" set up the Ordnance Corps, Medical Corps is not the right word. Perhaps we don't need a general head-on or something of that sort. Would that contribute to facilitating this

and take the word "corps" out of

DR. NORRIS: There is another question

I used the word "corps"

I would accept something less.





for you to work for some time, but I don't expect something like  
say we put our good friends here, the colonels, to start this contribu-  
tion. Am I right?

MR. CHAIRMAN: From the fact that we are making it a little more com-  
plicated? Any other discussion?

MR. ROSS: I would like to report on the committee's agreement with the  
point of view of exploring the possibility of such a Corps

not only to the Army  
Air Force, but to and other factors of the  
military forces. It unifies that extent.

MR. CHAIRMAN: Any other comments?

MR. ROSS: I would like to throw in this view. My suggestion of  
restricting it to the sciences at present covered in the Allied  
Science Division was this; that it is my belief that if you want  
a specific job done and you know you are going to have to do it,  
you have to bring together that combination which will get it done  
whether it includes bricklayers, plumbers, or laboratory electricians,  
bacteriologists, doctors or what not. But a complete stratification  
of scientists within the army would have little more effect than  
a unionization such as you have say, among electricians in the  
industrial world. In other words, what I thought we were talking  
about was ways to facilitate the sciences or to help the Army and  
the Medical Corps to use the scientists better and to better the  
scientists in that group. Well, I  
just don't know exactly where parliamentary procedure puts me at  
the present moment, but I would like to speak again with complete  
stratification or an attempted stratification of scientists within



the Army, I just don't believe it would be feasible.

MR. CHAIRMAN: Any further discussion?

MR. ARNOLD: I would like to ask now that the but looking at this organization chart of the Medical Service Corps and retaining in Dr. Wolfe's notion, the term "Corps", what it amounts to is really elevating Section I on a Corps basis. He didn't specifically state in the notion that was what was involved but if I understood this correctly, it doesn't mean the formation of a corps which includes all scientists, those in the Medical Department, those in the Quartermasters, Ordnance, etc., but the notion that we specifically and could not, either but what in essence it amounts to as I see it is raising Section V, Major Kuhn's section, to a Corps basis which is still in the Medical Department if that is followed. Now are we entirely out of order in that assumption? Somewhere we brought in actually big gun here in the notion. The notion carried no implication as to what is involved in the word "corps". Now am I correct in my interpretation there?

MR. CHAIRMAN: That is very hard for me to answer because I have the

that the

but this law brings together all of the scientists within the Army Service of that particular service we belong to and lumping them together is a separate scientific service or "corps" if you want to use it that way. Usually we don't use that term "corps" outside of the definite organizations, such as the Ordnance Corps and so on. He just don't refer to it in that way any longer. But I was assuming that the notion was that all scientists, irrespective of whether work with the Medical Department, Chemical Service, Ordnance, Quartermasters, or Engineer or Technical Service be brought to-



















at the present time. The possibility of making the decision  
you say that it's got to be given to the possibility of

DR. OWAN: As I see it

does not in any way further consideration of segregation of scientists from  
what used to be the National Administrative Corps that is, the administrative  
personnel. As I understood the action, it is really a matter which could  
proceed either way. It could end in the recommendation that the scientists  
be divorced completely from the National Department, or it could take the  
course that the scientists remain in the National Department, but be divorced  
completely from the administrative personnel. Is that correct up to that  
point? While I'm talking, I wish to express myself a little bit on this  
question. I'm not sure that

the that is the complete divorce of the scientists from the National  
Department would solve the problem that we great exists. Some within  
the last three years, I have been Chairman of the Committee that has been  
very gathering information from entomologists which thereby represent un-  
satisfactory their own experiences and their problems, and their association  
is general with them to this, that they believe that entomologists should  
be supervised by entomologists, so I submit this recommendation, that if we  
had a group of scientists and the entomologists in that group, we just  
need to have that group headed by a bacteriologist, for example. Or would  
the bacteriologist in that group be better off than the group headed by a  
psychologist? I'm not convinced that there would be a solution to the  
problem that exists, and the problem that exists today, I believe, is essen-  
tially a complaint that the scientists do not like to be supervised by ad-  
ministrative personnel. I think I'm correct in that because I was a part of the





organization and I've outlined many of these possibilities and that is the most consistent complaint, which in my opinion boils down to a really big question of screening and procurement, which Dr. Parr mentioned when he first opened the discussion this afternoon. That is, that if you have personnel who can work together and are temperamentally suited to work together and trained to work together, it doesn't matter whether it is an entomologist working with an MD or an entomologist working with a parasitologist, if they're properly trained and have the proper outlook on the problem, they will work together.

CHAIRMAN: Any questions? The question is a very general one. All in favor, I think we had better have the hands raised. Right or left, according to your dexterity. All in favor, please raise your hand. I see 12 hands. Contrary minded? I see 10 hands. Any one challenge the count?

(Can't hear end of record.)

DR. GRIFFITH: I move that the \_\_\_\_\_ of this group \_\_\_\_\_ the Medical Allied Scientist Section \_\_\_\_\_ or let the \_\_\_\_\_ the Medical Service Corps be elevated to remove from that Corps and elevated to a position equal to that of the Medical Corps and the Medical Department. From what I can \_\_\_\_\_ and add to the statement that I don't believe we should make any recommendation which is by a 12 to 10 majority. Now if we can't decide with any more unity than that what we recommend in order to make the recommendation. I would like to suggest, however, for your consideration a side amendment \_\_\_\_\_ to your motion and that is a second alternative but pending the time when, or if it is not feasible to establish the general scientific group, that a scientific corps within the medical department is the recommendation of this group.



necessarily opposed to a separate science corps.

I do feel that is not our business here today.

DR. LAFAN: Mr. Chairman, I wonder if it would be possible to go to Dr. Griffith's article and ask (a) that request did the other voice taken there well and a trend of our thinking, show that we were thinking in terms of a larger program. We could not agree to that but we could agree on something more modest.

DR. GRIFFIN: Certainly with so many of our members absent that the decision to regard the first motion as scarcely passed would be quite wise.

Mr. Chairman, I would like to present the amendment that the motion as presented by Dr. Griffith be changed to include all scientists in the Medical Service Corps.

MR. CHAIRMAN: Any motion movers?

DR. : Would you restate your motion?

DR. : be assigned to the Medical Service Corps, be assigned to a separate science corps of the Medical Department.

we will be working with the same group but we might bring in others in the present Allied Medical Service Corps.

: including Sanitary engineering for example it might be scientifically oriented.





DR. : Would you mind pleading your motion as you now consider it wise

DR. CHALKER: The motion was that the Science Section known as the Medical Allied Sciences Section be removed from the Medical Service Corps.

in a corps equal to that of the medical corps in two specific outfits in the general idea.

I would change that motion so that statement would be more general but scientists in the Medical Service Corps be placed in a corps equivalent to that of the Medical Corps of the

MR. CHAIRMAN: Is there any discussion?

: The motion has been called for and all in favor please raise their right hand. Contrary? Well I guess that I can count that all right.

DR. MILLER: Mr. Chairman, I would like to point out this motion which has just passed has not settled either of the major problems which we have been discussing. First, it has not done anything to remove scientists from direct medical control, it has simply raised the Allied Scientists one echelon which is not a great deal of accomplishment and secondly it has not done anything to permit communication between scientists within the Medical Corps and scientists without communication, in the broad sense of educational relationship. I therefore would like to move that we recommend to the Surgeon General that he study questions of procurement and utilization of scientific personnel in the Medical Allied Sciences, in the light of the broader issues of the total national utilization of scientific personnel and the question of the sort of auspices under which scientists operate most effectively.

MR. CHAIRMAN: We have heard Dr. Miller's motion. Is it seconded?

(Someone): It is seconded.



DR. FAIRBANKS: You were seconded in discussion about our questions, all in favor, please raise your hand. Contrary? Motion is carried. Any further business? I think this group should express its appreciation of the fine spirit and hospitality of our hosts. And I so move it. Is there a second? I think Colonel Goriup has a word, I shouldn't choke you off so much, but I think we have done a lot of business today. And I do know that a number are anxious to be on their way. Is there anything else to discuss?

: take up some of these items that we have been talking about and act on them. What about those medical . . . Certainly the two motions that were passed . . . and (2) there should be others I think that we would want to act upon. . . one regarding the continuing of . . . It has been referred to a committee as far as its report . . . do that in recommendation of this group.

: If not, do you want a motion to that effect?

: Well, it is . . . The third motion certainly stands, namely that our appreciation has been wholeheartedly expressed.

Dr. : . . . if not we want a motion to that effect, the third motion certainly stands in other words our appreciation has been wholeheartedly expressed to our hosts. Do you want to make that a motion Dr. ?

DR. : It is my recollection that Dr. Blake had taken care of that but if I am in error then we want to correct it because it certainly is an important matter--which was that the committee appointed was to include that as a recommendation of this group. I think that many of your other problems that you might think of was really involved in the other session. However,





I don't want to be arbitrary in that regard.

: Mr. Chairman, I would like to raise one question about grade rates and the number we can employ. Could we suggest or recommend to the Surgeon General that in case of the draft being passed, scientists in training be allowed to complete their graduate work either in or out of uniform. Indications are that recommendation or decision will be left up to the President who will then receive the advice of the Surgeon General and other such top advisors. Should we go on record as favoring such a policy?

DR. : I think that you can go on record in any way you like. I would like to say a word about that however, that matter has been gone into already. There was a group of 29 scientists who met in New York on April 29 to talk that matter over. They met the following day with Vannevar Bush and they later consulted with Andrews and with Senator Gurney. There was a feeling that the wisest thing to do was accept a compromise which is extremely difficult. Tactfully we were informed to accept the elimination from the draft of any category. We were sure that there is every hope that young scientists inducted as a student or scientist could be, and would be, after three months or some other short period of indoctrination, be referred back to continue his studies or to work in his laboratory. Perhaps Medical Research Council about a week ago, and I don't know whether Dr. recalls it or not. Maybe he wasn't at that meeting, he was at the meeting of the Division of Biology and Agriculture. They stated they thought that the position was not a good one for any group to back for an en masse deferment.

DR. : (Someone far back said something)



DR. : Yes, that means larger groups. We're pretty large ourselves but there are other groups that have gone into that. That was supposed to be one of the accomplishments of the council, institute physics, biological sciences, and they have gotten on the ball before the ball is passed. They were told that it wasn't an easy thing or necessarily a good thing to get a deferment in advance. But they thought Senator Gurney was particularly considerable to the idea in conference. They were to make an arrangement, and of course that is nebulous if you want a resolution then that is fine. What is your pleasure in this matter. I think we would be distinctly in error if we overlooked the point but I can assure you that was said about three weeks ago. It was just a week or two after April 29. Any other business?

DR. : Colonel Goring told us this morning that the Reserves had been neglected but to the future. I simply wish to perhaps a number of men who are still floundering around A call to headquarters here as to what their duties might be or if they can be particular units where they can be of assistance and help to the department.

(Record bad)

DR. : I believe that our host has highly indicated that there are two unbalanced propositions in this program - overemphasis on procurement and underemphasis on reserve. I seem to recall that Colonel Goring mentioned very distinctly that there was being added a highly qualified man to the office who would look into some three hundred men who would be dispatched to the regions who would take care of this. I am sure that he will bear in mind your suggestion.

(Record Bad)

DR. : Dr. Otto said the committee was well chosen when we made questions but we think him for his vote of confidence but we may use our prerogatives.





Doss that meet with your approval?

: Yes.

DR. : I don't think we can be of much help frankly.

Maj. Suma: In view of the interest in the reserve corps we have known for a long time and we felt before the meeting came up that we ought to have some phase of Reserve Corps in detail. Colonel Goriup has told us why. I do intend to make that the point of interest. We do have people that are interested because there is one thing to do to maintain their interest and I intend to keep those, moving in and showing real interest, informed about what the plans are for them.

DR. : Mr. Chairman, In these concluding moments of the conference I think it might be well to take a look at the insignia. As you notice the insignia shown for this new corps is being produced with the basic insignia of the medical department, adorned with the interlaced MS. In the history of the Medical Department of the U. S. Army there is a statement that in the year 1840 the Medical Department viewed a new uniform with epaulets which led to serious objections from the Medical Officers. The following year, due to their protests, epaulets were restored and the letters "MS" were replaced upon the epaulets as a mark of distinction.

: It is nice to have this encouraging note. We have another from Colonel Goriup.

COL. GORIUP: Thank you Mr. Clarke. On behalf of the Surgeon General and his staff, I wish to thank you for coming the great distances you did, leaving



your busy places of work. We wish to thank you for the help and consideration you have given us. You have been kind, gracious, you have thrown a rock at me, and I am sure that we are going to be able to weave a practical string from these pearls of wisdom that you have so spontaneously thrown into the hopper. In listening to these discussions during the last two days, I can't help but think of the story of the little boy who came home from his first day in school. His mother asked him if he had learned anything and he avowed as how he didn't think he had learned it all because he had to go back again tomorrow. I hope that none of you possibly we haven't learned everything we wanted to, that you haven't, and that we will have to call you back again soon. You have been very kind. Thank you.

Dr. Lamm: This concludes the meeting. It stands adjourned.

THE END





## THE AIMS OF THE CONFERENCE.

Colonel Tom F. Whayne, M. C.

Our Civilian Consultant System began with the organization of the Army Epidemiological Board in 1941. Consultant service during the war was expanded to include all phases of medicine including the Allied Sciences. The wartime experiences and the help we have had during the troublesome period following the war has convinced all of us of the mutual advantages to be obtained by a full understanding of the Army's medical problems on the part of the civil medical profession including the allied sciences on the one hand, and the willingness of Army medical officials to discuss military medical problems in the light of civilian developments and practices, on the other. The Medical Department of the Army, or for that matter any of the Armed Services medical establishments, are not groups apart but are just as much a part of our Government as any other department or agency. They are, therefore, a responsibility of every citizen, and in particular, should they engage the interest and constructive help of those in or allied to the medical profession.

It is with these concepts in view that The Surgeon General has authorized the calling together of this group. We have not asked you to travel long distances only to listen to a description of the Allied Sciences Section of the Medical Service Corps or to a round of speeches by officers of the Medical Department. We hope today to give you the background of the Allied Sciences Section and its organization within the Medical Service Corps, the needs and plans of The Surgeon General for the utilization of specialists in these many and varied fields, and to inform you as fully as possible of our over-all problems. Beyond these, the meeting is yours



and we have set aside a long period for discussion of any or all the questions we shall ask or those you may wish to bring up. We shall welcome any other comments or discussion that any of you see fit to place before us.

The aims of this conference, then, are (1) to acquaint you with what has been done in forming an organization of Allied Scientists; (2) to give you some concept of how we plan to use them; (3) to present our problems; and (4) to ask for your constructive criticism and help. We believe that the place of the Allied Scientist in the Medical Department of the Armed Services is a very important one. We realize fully that he has not always been used to the best advantage and that in some cases he has been entirely misused, considering his background and training. With the approach of the atomic age and considering the possibilities of new weapons and total warfare, the defense of our Nation and the success of our arms depends upon utilizing every specially trained scientist in the niche for which he is best qualified by experience, training, and adaptability. The Allied Sciences Section is the nucleus of cadre from which we would expand these operations during a mobilization. It of necessity must be made up of carefully-selected, well-trained, and highly-qualified individuals. With these individuals we must now carry on a large part of our research program, our laboratory work, and our preventive medicine operations. None of these can be done to best advantage without coordinated planning and effort. We want you to interest yourselves in the role and use of the Allied Scientists in the Medical Department. We hope you will make full comment on the developments thus far and give us of your suggestions on the scope, management, and utilization of the Allied Scientists organization. We further hope that this conference







is only the beginning of your interest in this group within the Army. We believe that you must know our problems and that your organizations and the American Association for the Advancement of Science must take an interest in the welfare of the Allied Scientist organization within the Army, and some responsibility for the type of individuals who compose it. The Army Medical Department must meet its responsibilities by nurturing this new organization in the light of requirements in training, appropriate assignment, and wise planning for the utilization of these carefully selected scientists. By meeting our several responsibilities, the outcome will be to our mutual advantage and will result in all of us joining hands in planning and preparing this highly important facet of the defense of our Nation.



## MEDICAL SERVICE CORPS OFFICER'S CAREER PLANNING

Lt. Col. Fred J. Fielding, MC

1. The personnel policy of the Army has been published in Department of the Army Circular 121 dated 30 April 1948. This circular states that the Army Personnel policy is predicated on the premise that the individual is the most important single asset in any army. The announced policy aims to clarify and improve the daily working relationships between each individual and unit by fully recognizing the dignity and importance of the individual and unit by fully recognizing the dignity and importance of the individual so that the Army may operate as an integrated team in the national military establishment. Army personnel management aims to maintain an organization efficiently administered and effectively managed. This may be implemented by assuring the most efficient utilization of every man's abilities, providing opportunities for each man to attain the highest proficiency consistent with his capacity, and planning wisely for the future so that any necessary expansion will use all available manpower effectively.

2. The Department of the Army through War Department Circular 143, dated 5 June 1947 placed the responsibility for career planning for all Medical Department personnel regardless of assignment status upon The Surgeon General. Basic career assignment patterns for the officers of the Medical Department have been prepared under this responsibility and are in operation. The Medical Service Corps basic career pattern chart has been given to you in the conference agenda and will be found on page 15.

3. In order to meet the military medical requirements of the Army and to implement the Army personnel policy, Medical Service Corps officers are





placed in four principal sections for the purpose of career management. These sections are Pharmacy, Supply and Administration, Sanitary Engineering, Optometry, and the Allied Sciences. The Allied Sciences Section, which we will consider specifically here today, is further divided into the technical laboratory officers, the nutritionists, the Entomologists and the Clinical Psychologist - Psychiatric Social Worker groups.

4. For the purposes of career management the Medical Service Corps career patterns are divided into three periods to cover an individual's entire Army career. These are the period of basic training, the period of specialization, and the definitive period.

5. The period of basic training is fixed at five years for the newly commissioned officer. During the first year of service or soon thereafter, each officer will receive initial basic military-medical training at the Medical Field Service School, Brooks Army Medical Center, Fort Sam Houston, Texas. Throughout the entire period of basic training, the officer will become acquainted with the Army and the Medical Department. He will serve on assignments in the Zone of Interior and on foreign service with fixed or T/O units. He will be rotated on various duties appropriate to his qualifications and learn, under supervision of senior officers, such technical and administrative procedures as are consistent with his particular field. The period of specialized training extends from the fifth year of service until the 21st year at which time the officer is eligible for selection and promotion to Lieutenant Colonel. Thereafter until his retirement, the officer is considered in the definitive period, during which time he will reach the peak of his particular career.

6. Specifically now to the consideration of the Allied Sciences Section of the Medical Service Corps.



4. For the groups composed of the Bacteriologists, Parasitologists, Serologists, Entomologists and Laboratory officers, -starrer assignments and guidance will vary. Requirements for commission in this section vary from a B.S. degree through the various Masters Degrees to the Ph.D. The individual possessing a Ph.D. or D.Sc. Degree will not be required to undergo certain portions of training mentioned during the overall period of basic training since he will receive initial assignments to positions of responsibility utilizing his professional skill. However, all newly commissioned officers will receive the basic orientation and indoctrination training at the Medical Field Service School. Initial assignments will depend, to an extent upon the education and training of the officer. In general, he will be assigned to Army Area and General Hospital Laboratories where considerable supervision will be possible and his professional qualifications can be evaluated by experienced senior officers. Following this period, advanced professional training in civilian institutions leading to a higher degree will be given to selected officers. Assignments to various research and teaching projects in the Army Medical Research and Graduate School, Army Area Laboratories and to large overseas laboratories will ordinarily follow. In these assignments, the officer concerned will be given increasing responsibilities. Officers not selected for attendance at civilian institutions will be assigned to the Army Medical Department Research & Graduate School for further training and experience, to overseas laboratories and to station hospitals, where they may function as Assistant Chief of Laboratory Service. Some officers will be assigned as instructors at the Medical Field Service School. During the ensuing years, these officers will be assigned to various types of laboratories depending upon their demonstrated ability to perform independently. Some will be given definite research projects. Others will be assigned as Assistant Chiefs of Laboratory Service in general hospitals, Army Area and overseas laboratories. Conditions permitting, selected







officers will be sent to various army or civilian institutions for training to develop their special skills in appropriate fields. For the definite period, highly qualified individuals will head divisions in the Army Medical Department Research & Graduate School, assume direction of various schools and divisions in large laboratories, and occupy high level staff positions in the Surgeon General's Office and other headquarters. Other officers will continue with professional work in the larger laboratories, in training of younger officers, or in research projects.

b. For the Nutritionists -- The general phases of basic training will be given to these officers where applicable. Assignments to Medical Nutrition laboratories will follow for training and experience in dietetics, clinical nutrition, and nutritional surveys. Some management training at the Quartermaster Food Service School will be required. Subsequent assignments to Army Area Headquarters and major theater headquarters as nutrition consultants will be given. These officers will act as consultants to the Surgeon in nutrition matters, will conduct nutritional surveys and make nutritional evaluation of menus, etc. Advanced training in basic biological sciences such as biochemistry, Pathology, Physiology and Food Technology will be given selected officers at accredited civilian schools and colleges. Some officers will be assigned to Military Government headquarters as consultants on nutritional matters to the Chief of Public Health Branch. As such they will supervise nutrition surveys on the civilian population, advise on ration scales and supervise research on nutritional deficiency diseases. Certain officers after acquiring a superior proficiency on nutrition matters will be assigned to the Surgeon General's Office as consultant on nutrition matters where they will prepare nutrition policies of the army, advise the Quartermaster General's Office on nutrition matters and coordinate army nutrition with interested civilian and governmental agencies.



c. For the Entomologists -- Individuals in this group entering the service without a Ph.D. Degree will follow the initial period of basic training. Subsequently they will be assigned to Army Laboratories, Medical Entomology Field Units and the larger posts, camps and stations. During this period the officer will receive training and experience in basic army policy and procedure and in Medical Entomology as related to the army. Close supervision by proficient entomologists will be given. Continued assignments will be to positions involving greater responsibility in Army laboratories and Medical Entomology field units. Officers will be assigned as instructors in Medical Department Schools, detailed as Staff officers for Military Government duty and/or will have Liaison and research assignments. Advanced professional training in Entomology and Public Health or Army or civilian institutions will be given to selected officers.

d. For the Psychiatric Social workers and clinical psychologists-- officers in this group accepted for duty with the Army will be professionally trained. The psychiatric social worker will have the Masters degree in social work and the clinical psychologist will have the Doctor's degree in Clinical Psychology. Hence, the period of basic training will vary to some extent. However, a thorough training in the basic subjects essential for orientation to the responsibilities and duties of these specialty fields in the army is required. This will include a progressive series of duty assignments during which additional training and education may be obtained. During this period, officers will be assigned to duty with neuropsychiatric services in general hospitals, disciplinary barracks, station hospitals, training centers, induction centers, special neuro-psychiatric units, Divisions and Army Headquarters. The initial assignment in the actual practice of his profession will be in the larger Neuropsychiatric installations, such as the General







hospital. Here the officer will obtain a thorough grounding in the military psychiatric program under professional supervision. Following this initial assignment the officer will be placed on duty with the Neuropsychiatric Services of a smaller installation, such as a Station Hospital or special neuropsychiatric unit, where he will directly be responsible for the program of his respective specialty. A variety and breadth of experience will be provided for the officer by assignments to disciplinary barracks, hospitals, and induction and training centers. This variety of experience will prepare him for subsequent administrative and consultative assignments in the definitive period. Selected officers will have the opportunity for advanced graduate professional training at civilian institutions as well as in the Military Service Schools. Selected officers will receive duty assignments as instructors at the Medical Department and the General Service Schools. Selected officers with demonstrated ability will be given progressively increasing responsibility for policy formation and program development through assignments with administrative and consultative responsibility in Army and Theater headquarters and in the Surgeon General's office. Some officers in these specialties will enter the area of research in his professional field. The capable officer will continue in such assignments which may lead to the responsibility for the organization and direction of the research program in his profession.

7. For the pure professional specialty classifications of the Medical Corps, individual Professional Progression Patterns have been developed for each of the medical and surgical specialties. These patterns go into detail to cover a thirty year period of type duty assignments that an individual officer might expect to receive. Also, these patterns show the progression through increasingly responsible positions which lead to the peak positions in his particular career pattern.



Similar progression patterns will be developed for each of the sections of the Medical Service Corps.

8. One of the objectives of the Department of the Army in the career planning program, is to arrive at an accurate classification of the qualifications of each officer. The Surgeon General is now the final authority for the classification of Medical and Dental Corps officers. Extension of this authority has been requested to cover all Medical Department officers. For Medical and Dental Corps officers, basic classification is a professional specialty and has been refined by the Surgeon General to show four levels of professional ability within the particular specialty. These are each dependent upon a progressively increasing amount of training and/or experience in the particular specialty field. A similar classification refinement for Medical Service Corps officers, particularly the allied sciences section is under study at this time.

9. For the Regular Medical Corps officers, a career Guidance Ledger has been prepared which contains the name of each officer tabulated by his primary classification. Within each classification the officers' names are arranged chronologically, by the year at which they reach age 60. The names also are listed in a column indicative of the individual's proficiency in his classification. Additional information concerning the officers' training status, and assignments are indicated by symbols. The ledger is maintained current through the processing of Department of Army orders for change in assignment, additions to and losses from the Regular corps, and through originating authorizations for changes in classifications. This ledger is utilized as an instrument to insure control of classification and a progression of the individual upward through the proficiency classifications as he qualifies through formal training and/or demonstrated ability while on duty assignments in the specialty. It is used to







maintain an inventory of officers by classifications and by groups within a classification to establish training requirements for specialist medical personnel for the Regular Army; to check their assignments as Chief of Services in General Hospitals in relation to other personnel within the eligible classification groups, and to assist medical officers, when interviewed, in deciding upon their career pattern when considering all personnel currently established within a specialty field. It is the intent to develop a similar ledger for similar purposes for the Medical Service Corps officers.

10. Likewise for only the Medical Corps so far, an individual career guidance record has been developed and prepared on each Regular officer for use in his training, classification and assignment for career guidance purposes. A chronological assignment card has also been prepared to assist in the control of a normal rotation of permanent changes of station. It is also the intent to develop these same records for the Regular Medical Service Corps officers.

11. Through the operations of these personnel control instruments - the individual record, the ledger, the authority for classification along with the classification refinement system, the professional progression patterns and the basic career assignment pattern, it is believed that The Surgeon General can accomplish his responsibility for career planning and guidance of Medical Service Corps officers. Further through the operation of these mechanisms and the co-operation of field commanders, the personnel policy of the Department of the Army "that the individual is the most important single asset in the Army" is implemented for the Medical Service Corps by assuring the most efficient utilization of every man's abilities and providing opportunities for each man to attain the highest proficiency consistent with his capacity.



## THE LABORATORIES AND SANITATION BRANCHES OF THE DIVISION OF PREVENTIVE MEDICINE

(Speech given by Lt. Col. H. A. Van Auken,  
Chief, Laboratories Branch, MSC at MAS  
Conference, 27 and 28 May 1948.)

The Laboratories Branch of the Preventive Medicine Division, Office of The Surgeon General, is charged with the provision of an integrated medical laboratory service for the entire Army. It embraces both clinical laboratory service in Army hospitals and laboratory service for the prevention and control of communicable diseases. To accomplish these ends there must be provided, in addition to hospital laboratories, a series of laboratories to which specimens requiring more highly skilled talents and equipment for their study may be referred. Such organizations are represented by Army Area Medical Laboratories, the Army Medical Department Research and Graduate School and their overseas counterparts.

At each level of laboratory service, the skills of highly trained scientists in the fields of bacteriology, biochemistry, parasitology, serology and virology are required. Not only will these individuals release medical officers for duties for which they are more specifically trained but also will bring to the problems involved knowledge not otherwise obtainable. It is anticipated that these officers will add materially to the laboratory service in the Army.

Continuous training for both officers and enlisted men is a prerequisite to insure that the latest advances are utilized at all times. For officers the Army has adopted a program of training in both civilian and military institutions. Currently, two Medical Service Corps officers are pursuing studies for their Ph.D. degrees. This program will be continued and probably







expanded. Officers are also sent from time to time to special courses for shorter periods for training in specific subjects. Selected men may be sent to the Medical Field Service School in San Antonio, Texas, for a regular course of instruction for technicians as well as to short refresher courses at Army Area Medical Laboratories. Most of this instruction is given by officers of the Allied Sciences Section and offers interesting work for individuals inclined toward teaching. Additional teaching opportunities are offered to Medical Service Corps officers by assignment to the staffs of the teaching general hospitals and to the Army Medical Department Research and Graduate School.

In World War II there were employed by the Army 1,301 officers of the Sanitary Corps in the categories described above. They contributed somewhat more than half of the laboratory personnel in the Army. Postwar needs are estimated to be approximately 155 such officers in the Regular Army divided among the various categories. This number of officers is roughly equivalent on a comparative basis to those used during the War.

Entomology is assigned to the Environmental Sanitation Branch of the Preventive Medicine Division, Office of The Surgeon General. Entomologists act as advisors to the Surgeon General, Surgeons of Armies and to overseas commands on all matters pertaining to the control of insects and co-operate with interested agencies in the Corps of Engineers and Quartermaster Corps on these problems. Malaria Survey and Malaria Control Units are field organizations under the direction of entomologists and offer practical application of entomological procedures. The larger laboratories are often staffed with an entomologist engaged in control activities and research problems.



As it is one of the laboratory sciences discussed above, entomology requires the knowledge of highly skilled individuals. The duties outlined above can be met most effectively by these officers and it is believed that they will aid greatly in the control of both disease-bearing and pest insects.

Much the same educational and teaching opportunities discussed above are available to entomologists. One entomologist is studying for a Master's Degree in Public Health at the present time and others will be sent to appropriate schools in the future. These officers are employed in instructing both officers and enlisted men at the Medical Field Service School and elsewhere in both scientific procedures and practical application in the field.

In World War II there were employed 240 entomologists in the Army. Current Regular Army needs are estimated to be 32. This number is perhaps somewhat fewer on a comparative strength basis but the former number was augmented by many more of the field units than are now existent. The greater number of those now needed will be in advisory, laboratory, teaching and research positions.

The discussion above has been concerned chiefly with the needs for scientists in the Medical Service Corps in the Regular Army. The numbers required are not great though we believe that their contribution to the Medical Department is most important. The figures which have been quoted have indicated that in the event of a national emergency many more of these officers will be needed. It is hoped that there will be a great number of officers in the Reserve who will be ready to assume their places in the military services should they be needed. They will provide a trained group whose support can be relied upon in the types of work discussed above.

This presentation has covered only part of the field open to the scientist







in the Army. Other speakers will cover the opportunities in detail in the field of research, particularly. It is believed that the wide variety of opportunities discussed above, along with others to be presented, offer interesting and profitable careers to scientists in the Army.



Personnel Utilization and Needs in the  
Army Medical Department Research and Graduate School

Rufus L. Holt, Colonel, Medical Corps

The Army Medical Department Research and Graduate School employs the services of approximately 355 persons including 41 officers, 49 enlisted men and 265 civilians. Of the 265 civilians 58 are in professional grades, 72 are in subprofessional grades and 35 are OAF and ungraded. In the professional group we have one P-8, one P-7, one P-6, six P-5's and 49 in other grades down to and including P-1. Degrees held in the professional group include M.D., Ph.D., M.S., M.B., O.P.H., Dr.P.H., M.A., Dr.Pharmacy, A.B., B.S., etc. There are 72 degrees held by the 58 individuals. Eight hold the Ph.D degree. Of the 41 officers 22 are Doctors of Medicine, three are Doctors of Veterinary Medicine, 14 are MFC and two are Doctors of Dental Medicine.

Most of the officer group are in training or on administrative duties but several are on research and act as laboratory supervisors. There are many teaching duties both in the classroom and "on-the-job."

Most of the interest of this group probably centers around utilization of professional civilian and MSC personnel. The civilian group furnish continuity in the programs; viz., research, diagnosis, biologic production, teaching and consultation service. Three are Scientific Directors of Departments. One is a Medical Officer, Preventive Medicine. Other specialties in this group include bacteriologist, toxicologist, chemist, parasitologist, hematologist, animal husbandman, research assistant, entomologist, librarian, biochemist and biologist.





Of the 14 SSO officers four are in administrative duties, two in bacteriology, three in parasitology, three in chemistry and two in serology. Three of this group are concerned with research exclusively and one is in training.

Most projects which give us marked concern fall within the research function of the School. Such things as diagnosis and production are, for the most part, routine. True, diagnostic biologists give us considerable concern but we are fortunate enough to have well trained, highly intelligent personnel who take great pride in their proficiency and thus we minimize our difficulties in this field. In research it is a different problem. This requires the services of a very special type of individual, one who has excellent educational advantage, a high state of training, a marked curiosity, an intense drive, an ability to plan and evaluate his work, and of great importance--initiative. If he is connected with an institution such as ours he must have or acquire two other faculties--he must be able to teach and he must be able to supervise subordinate research personnel. By mentioning only a few of the many research problems now receiving special attention I can illustrate the importance of suitable personnel to man the projects and how difficult it would be to secure suitable individuals in normal times much less in this hectic postwar adjustment period. To name virus blocking experiments, search for a suitable experimental animal for use in hepatitis research, basic research in immunity, development of new diagnostic tests and reagents, development, manufacture, assay and evaluation of virus and rickettsial vaccines, bacillary and amebic dysentery studies in all phases including diagnosis, treatment, etc.,



serodiagnostic and other tests for parasitic diseases will suffice to show how urgent the personnel situation is in our institution. To add further to our difficulties there are many duties which can be performed only by a doctor holding the degree M.D. Such individuals must have wide experience in preventive medicine, diagnosis, epidemiology and disease control. Individuals with such qualifications are indeed rare. While there are many duties which can be performed as well or better by MGO officers, the type of duty just referred to cannot be assigned to such personnel no matter how excellent their training. Teaching, research and laboratory diagnosis in serology, bacteriology, parasitology, etc., can be and is being done as well or better by carefully selected MGO officers. Field investigations along these lines can be successfully carried out by them. Most of our work requiring meticulous care and a high order of training and intelligence is carried out by nonmedical personnel. If medical problems arise to plague them they are furnished the services of staff medical officers or civilian medical staff members.

We are now conducting research on 25 major problems, all of which have been approved by Research and Development. These are very broad in scope. As an instance G-41-09-05, Bacillary Dysentery, includes all work on salmonellae, shigellae, the paracolonae, shigellosis, etc. If we employ a breakdown of the research projects we find over 100 subjects of major importance included in our research program.

Teaching duties await the assignment of subjects and students except for Basic Science, special courses and on-the-job training of students.





There are many projects about need to be undertaken but have not been by reason of the fact that suitable personnel could not be obtained. All matters connected with dental research and teaching have been deferred because of shortage of uniformed personnel and inability to secure properly trained civilian research members for the dental staff. At least three professional grade employees will be necessary for proper functioning of the division and at least one of these must be especially well trained in dental research and teaching. About six subprofessional people will be needed. In the Basic Science Section we have been unable to secure individuals versed in the electrical fields such as electronics; in the radio-active isotope field we cannot secure properly trained personnel until they have completed studies upon which they are engaged at this time, and in the Department of Chemistry and Physics we have been unable to activate sections in pharmaceutical chemistry, immunochemistry and physics because personnel well trained in such subjects are simply not available or at least not at the salaries we are permitted to pay. These projects will require at least eleven professional grade employees or their equal in uniform and about ten more subprofessional employees. In the field of immunochemistry we are particularly vulnerable. The need is urgent and it has not been possible to find a single individual versed in this work who had any interest in our offers. We are aware of the fact that future major improvements in our prophylactic armamentarium must await the acquisition of properly trained immunochemists to provide us with fractionation procedures on sera and vaccines.



If our institution is to operate with efficiency in the provision of services needed by the Army, if it is to be respected by our civilian neighbors and if it is to be outstanding in its fields of endeavor then we must secure a complete, well trained staff and be able to supplement or replace members of that staff with better and better personnel as we progress. We need support to reach this goal and it would appear that the Medical Allied Sciences Section might be of great assistance in the provision of personnel who meet our requirements.





## THE MEDICAL NUTRITION LABORATORY

(Speech given by Robert L. Schauss, M.S., Ph.D.,  
at Medical Allied Sciences Conference 27 and  
28 May 1948.)

The Medical Nutrition Laboratory, an installation under the jurisdiction of The Surgeon General, Department of the Army, is located in Chicago. Under the Army regulation which deals with nutrition, the Laboratory's activities fall into three general categories:

a. Maintenance of health and prevention of disease in troops in all environments.

b. Treatment of disease and injury in hospital patients.

c. The health of civilian populations under military control.

The staff of the Medical Nutrition Laboratory engage in research for and act as consultants to The Surgeon General in all three of the above general fields. At the present time there are sixty-six individuals working in the laboratory. Of these thirty-two are military and thirty-four civilian. Insofar as military professional workers are concerned, the laboratory has fifteen medical officers, two biochemists, one medical pathologist, one veterinary pathologist, one bacteriologist, one statistician and one dietitian. Working under the project system one or more of these men are assigned to various research problems, examples of which are:

CG-60-11-01. To develop techniques by which nutrition surveys may be quickly made on large populations with a minimum of personnel for use with troops and civilians of occupied territories. This includes clinical methods, laboratory methods and statistical sampling techniques.

CG-60-11-10. A field study to determine in troops the nutritional

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fell into three general categories:

2. Maintenance of health and prevention of disease in troops in

b. Treatment of disease and injury in hospital patients:

c. The health of civilian populations under military control.

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requirements of a survival ration under conditions of a sudden Arctic exposure to Canadian winter conditions after a long sojourn in a warm climate.

C6-50-08-06. To develop and elaborate measures for the prophylaxis and therapy of radiation injury.

C6-51-09-03. To investigate morphological and chemical changes of connective tissues in different disease processes and in experimental animals. Human diseases of importance in this respect are rheumatic fever, rheumatoid arthritis, atherosclerosis and scurvy.

There are twelve other projects in force at the present time. If plans for the future materialize the Medical Nutrition Laboratory will need at least two additional nutrition officers, two additional biochemists, an organic chemist, an experimental psychologist, an endocrinologist, two biophysicists, two microbiologists, a pathogenic bacteriologist, a physiologist and two research dieticians.





## CLINICAL PSYCHOLOGY & PSYCHIATRIC SOCIAL WORK

Colonel J. M. Caldwell Jr., M.C.

I would like to discuss with you this afternoon two other phases of activity that are conducted within the Allied Defense Section of the Medical Service Corps. Clinical Psychology and Psychiatric Social Work, organically and functionally, have been placed within the Neuropsychiatry Consultative Division and are represented as branches within this Consultative Division. I would like to first present to you the psychology picture.

As many of you know, Clinical Psychology, although not called Clinical Psychology, was first utilized by the Military during World War I. At that time, psychological activity was mostly centered around development and screening devices and resulted in the development of the Army Alpha and Army Beta mental tests. These tests were used very extensively during the first World War and the value which accrued gave realization to the fact that practical applications of psychology had great military value in selecting and streamlining personnel.

Unfortunately, the lessons learned from this preliminary use of practical psychology were soon forgotten and Clinical Psychology as we know it today, was not used in the intervening period between the two World Wars. There were, however, several psychologists who had received Reserve commissions and these psychologists were commissioned in the Military Corps Reserve. The Military Corps Reserve was composed of all Medical Department specialists and

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which there was no specific Corps in which they could be assigned. It was composed of sanitary engineers, hospital architects, bacteriologists, hospital administrators, psychologists and other professional skills.

At the onset of World War II, it again became apparent that there was need for better screening devices and selection testing and those psychologists who were members of the Military Corps Reserve were called to active duty to develop and put into use the selection devices which had been developed. The psychology of testing and measuring of intelligence and other skills had progressed greatly during the intervening years and psychology had expanded to the measurement of emotional and behavior factors. A number of psychologists were assigned to duty in medical installations and the result of their work was of immense value and assistance in the diagnosis and treatment of mental abnormalities and emotional problems. Early in World War II, those officers who were members of the Military Corps Reserve who had been called to active duty were transferred to The Adjutant General's Department since The Adjutant General was charged with the responsibility for the selection of personnel for various types of duties. When it became apparent that the psychologists had made and could make a very great contribution other than in personnel selection, the field of Clinical Psychology from a military point of view, came into being and more and more Clinical Psychologists with interest in neuropsychiatric problems were utilized in medical installations. This resulted in a War Department





Directive in September 1944, which transferred the personnel and the functions of Clinical Psychology as a medical specialty from The Adjutant General's Office to the Office of The Surgeon General.

During World War II, there were more than 200 Clinical Psychologists on duty serving under the jurisdiction of The Surgeon General in all types of medical installations, both in the zone of interest and in areas theaters of operation. Clinical Psychologists at these installations performed a wide variety of duties and in analysis of these duties made in 1947, showed that in the latter period of the war, approximately 80 percent of the time of a Clinical Psychologist was devoted to individual psychological examinations and about 20 percent of their time was devoted to counseling and therapy. The remainder of their time was distributed among other functions, such as research, administrative supervision and liaison and approximately 2 percent of their time was spent on non-professional duties.

Clinical Psychologists during World War II made a great contribution to military medicine and it is as a result of this contribution, and a realization on the part of The Surgeon General of the potential future contribution that Clinical Psychology can make, that it has been made an integral part of the regular peacetime medical program. Clinical Psychology has made great strides in the development of methodological procedures and techniques of diagnosis and therapy.

The Surgeon General's Office is definitely committed to the utilization of professional psychologists. We want them in the Army and have a great need for them for they can assist us in the solution



of any problem which confront us today and consequently, as has  
proposed to do whatever is necessary to establish within The Surgeon  
General's Office a group of competent and professionally qualified  
psychologists. As an indication of this, I might state that we are  
about to graduate ahead this fall 12 Regular Army officers for  
training leading to the Doctor of Philosophy degree. The interest  
in psychology of The Surgeon General is two-fold. We are interested  
primarily in Clinical Psychology and Psychophysiology from both an operational  
and research point of view. We have established a very high criterion of  
professional competence and in both Clinical Psychology and Psychophysiology  
demand that our officers possess a doctorate. We are not interested in  
having within the structure of the Regular Army a large group of well-  
skilled technicians but are definitely interested in having a group of well-  
trained and professionally competent scientists.

In the field of Clinical Psychology, we have employed the con-  
cept of the neuropsychiatric team, a concept which is practically un-  
usually used in civilian practice. Clinical Psychologists in the Army  
may be assigned to General Hospitals, Station Hospitals, Military  
Barracks, Mental Hygiene Clinics of Training Centers, to staff duty at Army  
Headquarters or to research duty. This provides the psychologist in the  
Medical Department with a wide variety of professional duties, and en-  
ables him to satisfy any professional psychological interest he might  
have, whether it be the practical application of Clinical Psychological  
techniques, research or administrative functions.









...and will become a part of our permanent program.

At present, we have some qualified officers, we need more. Some, in this field also, we have a problem in recruitment. We would appreciate your help in this area as well.





## U.S.A.F. PSYCHOLOGICAL RESEARCH

14. Col. Tucker

Psychological research in the USAF is currently being conducted at four field installations with professional supervisory personnel being located at Headquarters USAF and at Headquarters Air Training Command. The work of the School of Aviation Medicine, Randolph Field and at the Army Medical Laboratory, Wright Field is paid for by Air Force Medical Research Funds. The research activities at Andrews Field is the Strategic Air Command and at the Lackland Air Base in the Air Training Command are financed from the operating funds of these commands. The proposed DMR budget includes Air Force Medical Research Funds for conducting research in these two commands.

The psychological research being conducted at the Army Medical Laboratory has a large psychophysiological component. This research is closely coordinated with other laboratories in the Engineering Division of the Air Material Command. These laboratories often suggest important problems and are largely responsible for applying the research findings. Current research projects include the following:

1. Psychological Principles in the Design of Controls for Searching Gun Sights.
2. Psychological Factors in Legibility of Instrument and Control Markings, Computers, Graphs, Tables and Check Lists.
3. Psychological Principles in the Design of Instrument Displays for Speed and Ease of Comprehension.
4. Psychological Principles of Instrument Efficiency in the Design of Aircraft Controls.
5. Study of Pilot Behavior During Blind Flying.
6. Psychological Aspects of Orientation as Related to the Design of Aviation Equipment.



7. Orientation Requirements in Radar Displays.
8. Effect of Moderate Acceleration (G) on Psychological Capabilities Related to Flying.
9. Direction of Motion in Positioning Visual Indicators by Use of Control Knobs.
10. Questionnaire on Pilot Error in Using Equipment.
11. Interpretability of Sensitive (Multi-Revolution) Aircraft Instruments.
12. Psychological Factors in Instrument Check-Reading.
13. Eye Movements During Instrument Flying.
14. Motion and Time Analysis of Navigation Entries During Polar Flights.

The School of Aviation Medicine conducts psychological research on factors affecting the efficiency of flying personnel and on methods of selecting, classifying, and evaluating such personnel. An extensive project is under way with the Navy at Pensacola to validate a large number of experimental tests against success in pilot training. Other projects include:

1. Personnel Selection and Classification Procedures
  - a. Intellectual tests
  - b. Perceptual tests
  - c. Personality tests
  - d. Psychomotor tests
2. Psychological Principles Involved in Aiming and Directing Objects in space.
3. Study of Combat Leadership.

The Psychological Research and Training Unit at the Lackland Air Base in the Air Training Command conducts research on personnel and training problems. In addition this unit is responsible for administering the Air Force Classification Battery at every installation in this country to applicants for pilot training.





The following projects are under way at this time:

1. Officer Candidate School Project
2. Air ROTC Evaluation Project
3. Development of a Battery of Printed Tests for Technical Training Classification
4. Selection of Technical Training Instructors
5. Selection of Basic Training Instructors
6. Development of AF Educational Examination
7. Analysis of Pilot Instrument Flying Information Test
8. Research on Morale of Basic Trainees

The Aviation Psychology Branch, Headquarters, Strategic Air Command, Andrews Field studies the psychological problems of the operational air force. The determination of actual on-the-job requirements of important jobs will assist in improving procedures for selection and training. Other studies are aimed at improving the utilization of trained personnel. One project involves the administration of personality measures to groups of men going to the Arctic and the obtaining of reports of their behavior while on that duty. Other projects are continuing in the following categories:

1. Job Analyses of Military Specialties
2. Development of Proficiency Measures for AF Personnel
3. Validation of Aircrew Classification Tests
4. Aircraft Accident Prevention Research
5. Training Research
6. Selection for Special Assignments



## THE SPECIAL PROJECTS DIVISION

(Speech given by Albert J. Ewer, Major, MC, at  
the Medical Allied Science Conference 27 and  
28 May 1948.)

The Special Projects Division was activated 15 October 1947 to deal with problems connected with the use of atom bombs, radiological and other special projects as they arise.

In order to carry out this mission, the Special Projects Division at present is using two highly trained men of the Medical Service Corps. One is serving with the Military Application Division of the Atomic Energy Commission and the other is engaged in research work at the University of California.

In the future we expect to utilize all Medical Service personnel to a limited extent and a small chosen group with special training in specific positions.

We would like to have all Medical Service personnel trained in short indoctrination courses. These courses will run from one to two weeks and would acquaint the students with the problems of radiation hazards and the methods of protection.

The second group of officers will be assigned to six week courses in radiological defenses. Such courses are now being given by the Navy at Treasure Island, the Army at Edgewood Arsenal and the Air Force is opening a like school at Kessler Field. These officers would act as radiological defense officers for fixed and field hospitals. From the graduates of these courses officers will be selected for additional training. Those selected must possess a degree and have completed the radiological defense



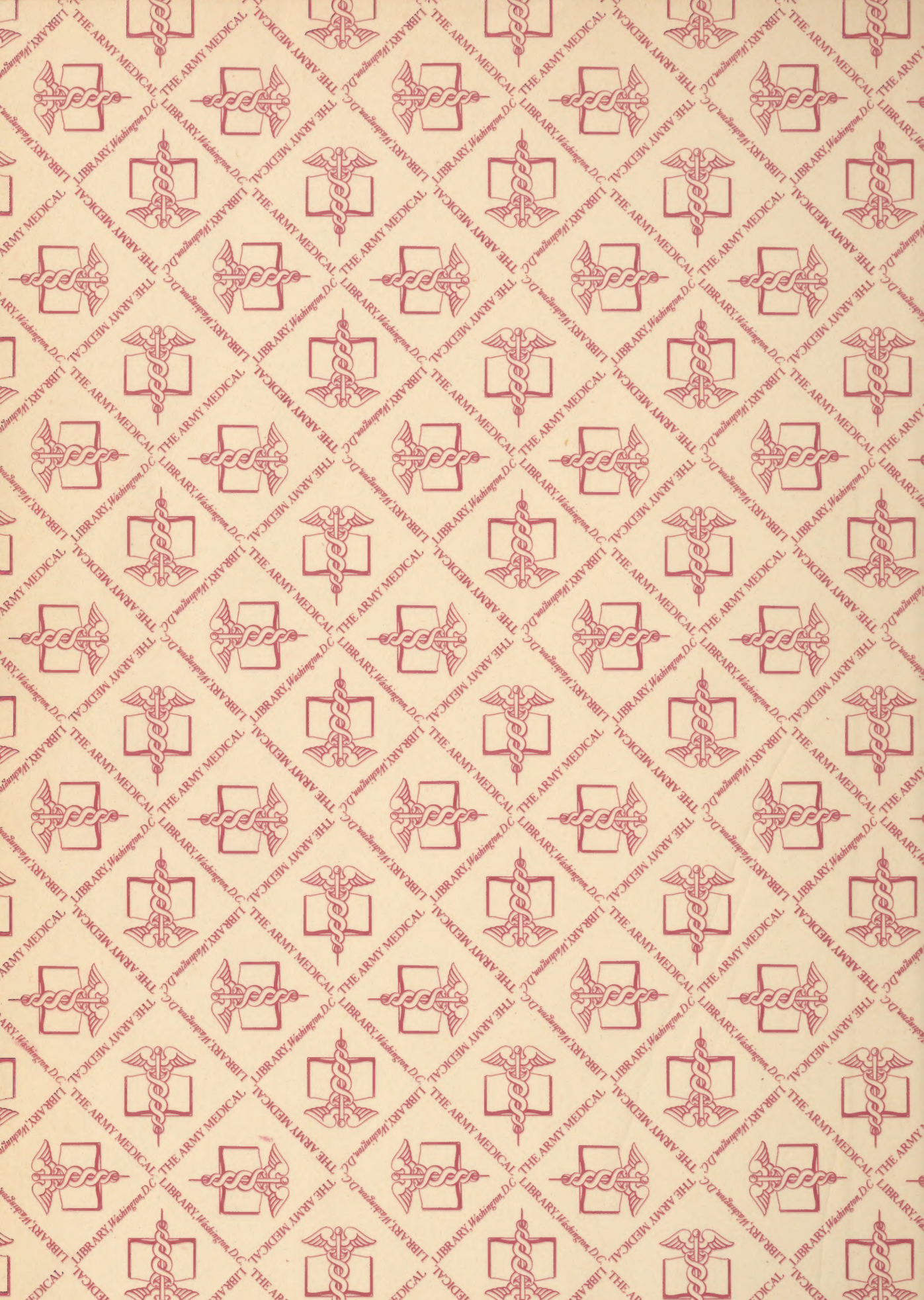


course with a high average. These men will be assigned to civilian universities for additional training. The course as now planned, will involve three years work in mathematics, physics, chemistry and biology. As the plan now stands, 40 such places are allotted to the Army, Navy and Air Force each year, so you can easily see that this will be a highly specialized and selected group. Upon completing this course of study, the officers will be given a Masters Degree and will be utilized in isotope laboratories in general hospitals and as technical advisors on high level staffs.

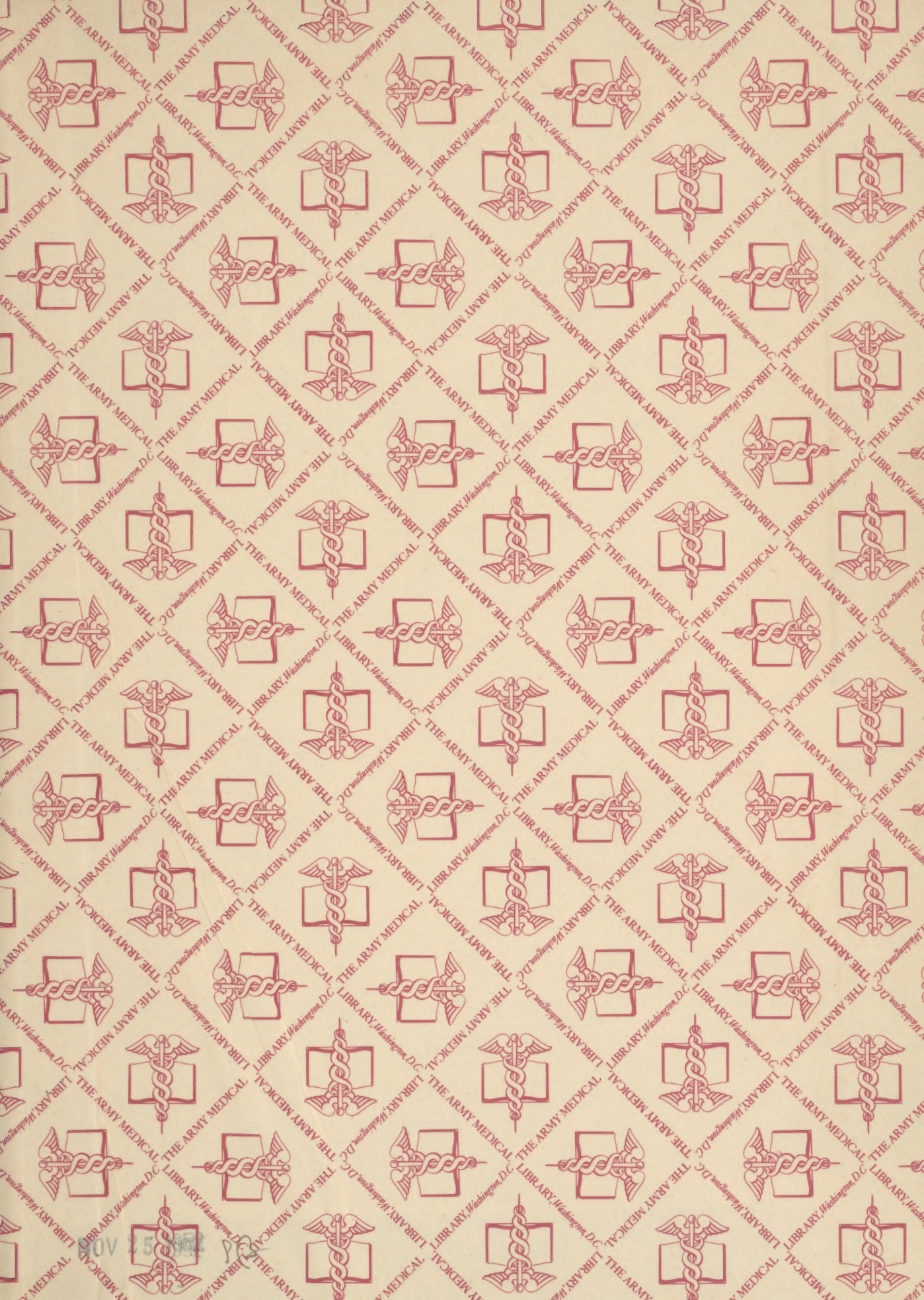














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